Telephony

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Selecting and Training Men to Sell Directory Space

By L. M. BERRY

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QUALIFICATIONS looked for in selecting men to be trained to sell telephone directory advertising space and classified listings. Scope of work covered in the course of training. Paper presented at recent conventions of Ohio and Pennsylvania associations

DIRECTORY advertising and classified listings, properly sold, increase the usefulness of the telephone directory to subscribers, thereby adding to the value of telephone service. Training salesmen to sell directory advertising under present-day methods of selling must be a continuous process. It never ends. New conditions demand new ideas, and we are constantly making available to all of our salesmen the new methods and plans which we have found can be used successfully.

I presume my subject should be broadened so that I may say a few words about how we select our salesmen, as well as how we instruct them to sell directory advertising space and listings in a manner profitable both to the advertisers and to the telephone companies, while at the same time assisting in building up good public relations.

It is necessary for us to take many new men who have had no previous experience in our particular line. In fact, we have been more successful in securing good salesmen in this manner than by hiring men who were already familiar with and who had previously sold directory advertising. The "green" man, of course, must have the qualifications necessary to make a good salesman, and then it is up to us to build on that foundation. So often the man who has had selling experience in our line is not willing to accept information or be guided by our present methods.

We know that a man who can sell advertising in our line without any particular training, can do much better and can sell more advertising when he is properly trained. The training, of course, does not make a salesman—no training can do that. You must have something to work with in the beginning, and getting the right men for salesmen is the hard task.

There is no simple formula and there are no general rules that can be applied for selecting men. There are certain characteristics which we look for in all of the men who apply to us for a selling position. Of course, we can eliminate from consideration many applicants who obviously would not be fitted for work in our line.

Impossible to Predetermine Who Will Make Good

There is no method of which I know that will definitely determine in advance that a man is going to make good. We can judge the record of a new salesman in a comparatively short period of time, certainly within a few weeks, as to whether or not he will make good. If he sells, he is good; and if he does not sell, he is a failure.

In the 25 years I have been in the business of selling directory advertising, I have seen it sold under a wide variety of conditions. I have followed very closely the progress made under different methods employed by sales organizations operating within and without the ranks of telephone companies. This has enabled me to note both good and bad sales features and has been of assistance to us in improving our own methods of selling.

I started telling telephone executives many years ago that our company ought to be able to do a better job in selling telephone directory advertising than direct telephone employes, for this is our one line—we do nothing else 12 months in the year. Our organization relieves the telephone companies of a side-line so

they can devote their undivided attention to their real business—the telephone business.

E. C. Blomeyer, vice-president of Theodore Gary & Company, said, in an article in the December 21, 1933, issue of TELEPHONY:

"The time of the telephone management can be used to better advantage by concentrating on the installation of more telephones and the building up of a larger toll business.

In the end, therefore, we come to this conclusion: That the real business of the telephone company is, always has been, and perhaps always will be, the selling and supplying of exchange service and toll service."

While it is true some advertising was sold in telephone directories in the early days when but little, if any, thought was given to orderly sales planning, no substantial progress was made until sales were conducted in a methodical manner and in accordance with prescribed regulations.

Believing that telephone directories were destined to become popular advertising mediums, our company early in its career began to improve its sales force, though small in number, and adopted ways and means by which selling would be conducted in a more systematic and intensive manner. To that end we later established training schools, which are held from time to time as needed.

In these schools our salesmen are taught the essentials of modern salesmanship as applied to directory sales so that the salesmen will observe telephone company policies at all times, with particular emphasis on public relations.

Scope of Directory Work

Our work embraces the official telephone directories covering more than 2700 cities, towns and villages in 20 states of this country and in Canada. We must maintain a full staff of experienced salesmen for this wide expanse of territory 12 months in the year but, as is the experience of all selling organizations, we are frequently called upon to supply additional salesmen and replace men at certain points for various reasons.

We are constantly receiving applications for employment from all parts of our territory. If the applicant has had some sales experience and, from his letter or personal call, appears to have good qualifications, he is furnished with a copy of our standard application form which requires him to furnish more detailed and intimate information. Should the information contained in the application blank impress us as being favorable, the applicant is requested to report for a personal interview.

It is by no means easy to select the real salesmen from the mass of applicants. One reason for the number of mediocre salesmen is the prevailing idea that anyone with or without preparation is qualified to take up selling work. The truth is that a good salesman must be a thinker and must be able to apply a knowledge of psychology. In addition, he must have certain other qualifications, such as good health, honesty, courage, ability and desire to work hard, good appearance, determination, resourcefulness, tact, initiative and enthusiasm.

"Made Salesmen" Have Native Capacity for Success

While I am a firm believer that there are more "made salesmen" than "born salesmen," still no amount of training and effort will make a salesman if the right material is not there in the first place. We try to find men who have the capacity for sales success. Selling requires thinking and hard work. The salesmen who make a real success in selling in our line have an indefinable something that makes it possible for them to get the order after the prospect has said "no."

The day-in and day-out producer is a man who has an intense interest in his work and who carefully plans all of his calls, who decides in advance whom he is going to see, what he is going to say, what space or listings he is going to present. In short, he has at his command all of the arguments with which to convince the prospect that it is to his advantage to buy.

Preparation and interest on the part of the salesman gives him confidence. This shows in his expression, his tone of voice, his attitude and bearing, so that the prospect believes what the salesman says.

A beginner once asked an old-time salesman, the general manager of his company, how he could tell when it was the proper time to close the prospect after he began talking to him. The old-timer's reply was: "Don't wait until you get to him; sell him on the way over. Simply go to get the order signed."

When we decide that the applicant is a good prospect for our organization, we require him to report at one of our offices to take a regular course in the theory and practice of modern directory advertising salesmanship, as covered by our sales manual and taught in our training schools.

If a school is not in progress at the time, the new salesman is given individual instruction, with which is included field work in the company of a senior salesman in calling upon prospects. It is a definite part of our educational program that all new salesmen are required to spend some time with the older salesmen making sales contacts before they are permitted to make calls alone.

Salesmanship and sales management assume many widely-varying forms, according to the field of work. A system for selling automobiles or any other tangible product is quite different from methods that are effective in selling telephone directory advertising. This, like all other forms of advertising, is an intangible commodity. Therefore, we often find that salesmen who are able to sell goods or tangible products in a successful manner are unable to make good in selling an intangible product like advertising.

Not so many years ago salesmen sold space; that is, in our line they talked back-cover space, a quarter-page or some other size of space in the classified section, an alphabetical margin, etc. Now more than ever before our salesmen are selling ideas—ideas which are designed to assist the advertiser in selling goods or services at a profit—ideas which are the result of careful planning so that the advertiser may realize the advantages of carrying proper telephone directory representation as a part of his general advertising program.

Our training schools are held once a year, on an average, in each of our sales divisions at central points where the salesmen can assemble without undue loss of time from their work. All employes who are directly concerned with the sale of directory advertising are required to attend these schools. This, of course, includes the experienced salesmen as well as those taken on between school sessions.

In the case of new salesmen who have received individual instruction and then practical experience in selling before actually attending one of the schools, we have found that this experience is very helpful to them in making it possible for them to get the most out of the school sessions.

The course of training in our schools is divided for convenience into lessons, each in themselves covering the various subjects which are most essential to our line of instruction. These subjects will be mentioned and briefly discussed in practically the same order as presented

in our classrooms. We have found that two weeks spent in school work is sufficient before sending a salesman out for field experience with the older salesmen.

Subjects Covered in Course of Training

Lesson No. 1 is a discussion of the present telephone directory and its historical background. The old-time directories and classified sections were of many styles and sizes, and much advertising was carried in the alphabetical and classified sections in such a manner as frequently to impair the usefulness and reference value of the publication.

In 1924 a transition began to the present form of classified section, and in a few years thereafter it had extended quite generally throughout the telephone field, until now there are very few classifieds of any size or importance which have not been changed to meet the standard specifications common to what is called the "vertical" style. All classified sections are now on a free basis, which means that every business subscriber is entitled to one listing under his proper heading in the classified section without charge.

The physical structure of the directory is discussed in detail during the training course, especially the various sections used for advertising—such as the cover, the alphabetical section, inserts, the classified section, and all special features. The salesmen are also shown what the listing restrictions are in the alphabetical and classified sections, the type of listings acceptable and those not allowed, so that a salesman will be able to talk intelligently to a subscriber regarding listings of every description.

This lesson includes complete information as to the value of the service we are selling, as well as detailed information concerning every type of space. As in all other lines, it is necessary for our salesmen to have a complete understanding of our service or representation available to the advertisers, or his selling days will not survive for any great length of time. Knowledge is power.

General Advertising and Various Types of Mediums

Lesson No. 2 is a discussion of the various types of general advertising and advertising mediums. A knowledge of the principal types of advertising is essential, for we want our salesmen to be able to talk about all kinds of advertising. We instruct them never to "knock" another advertising medium, but to show in a constructive way how the proper telephone directory representation will fit into the prospect's advertising plan. When our salesmen have a knowledge of the value of all forms of publicity, they can talk about telephone directory advertising in a manner that will be more convincing.

The telephone directory is a powerful ally of every other type of local advertising, for it tells the buying public "where to buy" everything and makes it possible for an order to be placed immediately.

In this lesson we review different types of advertising copy appearing in magazines and periodicals, paying particular attention to and studying all types of reference mediums. This includes all forms of directories.

The reasons are shown why telephone directory advertising is good advertising, and convincing answers to every conceivable objection are presented.

Lesson No. 3 discusses the classified heading structure, in which are included the purpose, selection, arrangement and indexing of headings, types of headings and heading restrictions. As this subject directly affects telephone policy and heading regulations vary so widely in different parts of the telephone field, it is necessary to treat it in a most general manner.

Considerable practice work is required by the students, which usually consists in classifying business and professional subscribers; noting the difference, if any, between certain classifications designated as main and commodity headings, and the acceptability of classified headings.

Lesson No. 4 treats of directory copy, preparation and layout, a subject of vital importance to all directory salesmen. Upon his ability to prepare a sketch or layout which will indicate to the prospect the appearance of his advertisement, the consummation of many sales depends. While our company employs competent commercial artists to draw up sketches and layouts for displays, oftentimes our men are confronted with emergency situations and must prepare the layouts themselves.

Insofar as copy in the classified section is concerned, the display is usually of the poster type (if the space is fairly large) and to be most effective it should be brief. The text matter is usually confined to the principal features of the commodity or service advertised and should be brief and to the point.

To attract favorable attention, it should be so worded that it is perfectly clear and cannot be misconstrued or misunderstood. The typographical treatment of the advertising copy is important, and necessary information regarding type faces, engravings, borders and layouts is, therefore, furnished to the students.

Lesson No. 5 includes the four steps of sales procedure as we have set them up in our work and is a very important one. The first step involves a description of the selling process, the elements of a sales interview and preparation. The second step covers the approach of the prospect; the third step, the presentation; and the fourth step, the close.

What Is Salesmanship?

The first step opens with a discussion of the definition of salesmanship. While many recognized authorities differ in this respect, salesmanship has generally become regarded as the art of presenting the advantages of an offer in a way which makes direct appeal, and tends to prompt action.

Salesmanship is vital in every phase of life. The general manager who seeks to persuade his board of directors that some action is desirable employs the principles of salesmanship. So does the preacher, the teacher, the lawyer, the politician. No man has yet gotten a wife unless the courtship and proposal were good salesmanship.

Every idea has to be sold—against doubt and resistance. The first steamboat, the first electric train, the airplane, the radio—all of the world's greatest inventions had to be sold before they could revolutionize our lives. For salesmanship, reduced to its simplest form, is the science and the art of prevailing on human beings to see certain truths and to take corresponding action.

After passing through the rudimentary stages of the training course, the students are now ready to be schooled in the type of salesmanship we have found to be best adapted to our specialized selling work. This is discussed under the general subject termed "The Sales Interview," and for the purpose of orderly study it is broken down into four parts as follows:

The Salesman's Preparation

Part (a). The preparation consists of the salesman's personal qualifications, his knowledge of the service he is selling, his general knowledge of the community he is canvassing and, most important, his knowledge of the prospect's business and a comprehensive plan of representation that will fit in with the pros-

pect's needs and will be profitable to the advertiser.

The salesman must further be able to quote certain data pertaining to the telephone company and the directory, such as the number of business and residence subscribers, how many rural subscribers there are, the average number of local telephone calls per day, and how many long distance calls, the actual circulation of the directory at the time of distribution, and how many additional copies are given out to new subscribers during the directory period, what percentage of the total families of that community have telephone service, and what is the movement of families in and out of the directory area.

We instruct our students to clip all newspaper items pertaining to local business conditions, and to paste them up neatly in their portfolios so they will be ready for instant use in talking to prospects. They should also know what roads and highways the rural telephone lines cover and how far they extend from the main city. They are instructed to get all possible facts regarding the local telephone situation.

By usage surveys it has been determined how much the classified sections of telephone directories are being used, and copies of the surveys are made available to our salesmen. In making the surveys we question a certain number of telephone subscribers in a community, preferably housewives, usually by telephone but sometimes by personal solicitation, as to the extent they use the classified directory for placing calls to business and professional places.

Our salesmen usually work from what is termed prospect cards which cover all business subscribers and current advertisers. The information contained on these cards includes the telephone number, name and address of the subscriber, and the free classified heading under which he is listed. If a present advertiser, the type of directory representation and present charges are also included.

A check of the prospect's credit with the business office of the telephone company is made in advance of the call whenever there is any doubt, to prevent a waste of the salesman's time.

As a final step in preparation, consideration must be given to gaining access to the prospect. It is fairly easy to see a prospect for directory representation without making an appointment but when an appointment appears to be necessary, it can usually be made by telephone.

Our students are told that considerable information concerning the prospect's business of this kind can be secured upon approaching the prospect's place of business. Signs, notations on door fronts or windows, products displayed, etc., often suggest heading classifications under which prospects should be presented with some item of advertising, or such information can be used to feature points in display advertising.

The Approach to the Prospect

Part (b). This covers the approach to the prospect, which consists of a few opening phrases in which the salesman identifies himself and explains the general purpose of his visit. The approach should be planned and executed with a view to creating a favorable impression upon the prospect, for it is difficult to overcome a bad first impression.

Throughout the approach the salesman should convey the impression that he wishes to render a service to the prospect, and must speak in terms of the prospect's business and possible benefits to the particular prospect rather than to deal in generalities. All business men are interested primarily in their own concern and its success.

Salesmen must be made to realize that extra hours devoted to digging up facts and planning are the answer to making good in this new age of salesmanship. This, of course, is not new, but now that sales are somewhat more difficult than they were a few years ago, it is vital to success.

Every buyer is vitally interested in his own problems and if a salesman does not know what they are, he has no business making the call. People buy for different reasons; therefore, different tactics and arguments are necessary.

Proper preparation gives the salesman the opportunity to plan his attack. A salesman who has prepared himself speaks with confidence and exactness; he is definite in what he says and thus gains the confidence of the buyer. Too many salesmen talk without saying anything.

The practice work in connection with this step includes several examples of the manner in which the salesman identifies himself on meeting the prospect and shows how he leads up to and explains the purpose of his visit. Demonstration sales are made for many types of business, and the right and wrong methods of selling are presented in a forceful manner.

Presentation of Sales Appeal

Part (c). This step includes the presentation, that part of the interview in which the salesman tells his story, states his various selling points or makes his sales appeal, answers objections and leads up to the closing. It is a succession of steps between the salesman and the prospect.

In interviewing his prospective customer, the salesman will find himself facing these obstacles—instinct, habits and prejudices or formed opinions. The instinct may be pride of the prospect regarding his present method of advertising, or his instinct to guard his money. He is on the defensive, especially when dealing with strangers. Experience has brought this about.

The salesman who is keenly on the alert may combat instinct with instinct by giving a frank, open explanation and appealing to the other man's curiosity, his desire to gain in business, to obtain new customers and develop a great amount of business.

Any one of the following desires may move a prospect to purchase directory representation when the salesman identifies the right motive and effectively appeals to it: Competition, the desire to equal or excel others in the same line of business; distinction, the desire to have something new or different from that used by others; imitation, the desire to do what others are doing or have done; protection or insurance, the desire to guard his business interests.

In appealing to buying motives the salesman must visualize his appeal, or paint a word picture in adequately descriptive terms of the prospect's business in order to make him see mentally the situation as it will exist after purchasing directory representation.

We do not have a standardized sales talk for our salesmen. However, we think it is a good idea for each salesman to work up a talk on directory advertising which will include all of the advantages in logical sequence, so that from time to time when he is side-tracked in his sales presentation he can come back to the main track and continue in a logical and convincing manner.

Closing the Sales Appeal

Part (d). This step in the sales procedure is the close, which is the logical ending of a logical sales presentation. We want our salesmen to look upon the securing of the contract or order as the natural result of the presentation. So many salesmen get cold feet and are afraid to ask for the order.

There are many ways of asking for the order without saying in so

many words, "Won't you buy?" The close is the most vital phase of the sale and it requires skill, but we do not want our salesmen to magnify its difficulties. We want them to take out their order book, place it in front of the prospect as they talk to him so that he will become accustomed to seeing it. Then at the right moment, and a good salesman knows when that time comes, he should go ahead and fill out the contract.

All terms of the contract should be thoroughly reviewed with the advertiser to avoid future misunderstandings. These terms include item charges, billing and arrangement, and the duration of the contract. Finally the advertiser's signature on the contract must be secured.

In many cases it is necessary to make more than one attempt to close the sale. Many sales which would otherwise be lost are made through tactful perseverance. The bearing and conduct of the salesman at the close of the interview has a decided effect upon the advertiser. When a sale is closed, a salesman should thank the advertiser and depart without undue delay.

When a sale is not made, the salesman should thank the prospect for his time and attention and leave the way open for a future visit on friendly terms.

Thorough instruction is given on the subject of public relations. It is essential that all of our salesmen leave the subscribers to the telephone companies in the best possible frame of mind, regardless of whether they buy advertising or not.

We know that, after all, a man's success in selling depends upon himself, but we also realize that cooperation, training and close supervision on the part of our company are a great aid to our salesmen and increase their production. We believe in frequent sales meetings, certainly on a large canvass at least weekly, and usually twice weekly.

We have booklets prepared from time to time, also sales helps of many descriptions for the use of our salesmen. We send out many bulletins and letters with actual stories of what our salesmen are doing in different territories, and with new ideas and methods for improving sales results.

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Netherlands Government to Absorb Municipal Systems

All telephone communications in the Netherlands are government-owned, except the municipal systems of Amsterdam, Rotterdam and The Hague. In 1937 the concessions granted these cities expire. Negotiations are going on between the government and these cities to come to an agreement whereby the municipalities are sufficiently compensated for the loss of income from these services and the technical combination effected so as to make one unit for the whole country. It is likely that a satisfactory conclusion will be reached, according to Acting U. S. Commercial Attache Don C. Bliss, The Hague.

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Turkish Government Buys Istanbul Telephone System

An agreement has been concluded for the purchase by the Turkish government of the Istanbul Telephone Co. at a price of £800,000, payable in 40 annuities of £20,000 each, beginning in 1939. As soon as the agreement is ratified by the Council of Ministers the government will be considered to have taken over the company as of July 21.

A concession to install and maintain telephone service in Istanbul and its suburbs was granted in 1911 to the British group, and most of the company's capital still is British, the rest being American. The service rendered by the company has been consistently good. The system is almost entirely automatic.

The company represented one of the few remaining British concessionary interests in Istanbul, and its purchase accords with the government's decision to acquire gradually for the state all public services.

The Operators' Corner

By MRS. MAYME WORKMAN

Traffic Supervisor, The Illinois Telephone Association, Springfield, Ill.

ONE OF the many uses of the telephone in the natural conduct of everyday business life—in the gas industry. Series 207

ALTHOUGH many of us have been engaged in telephone work for a decade or more, still we frequently hear of some particular value of telephone service.

The judicial bulletin of the Oklahoma Utilities Association on July 10 contained the following interesting article on the "Importance of the Telephone in Gas Transmission." According to this article, E. R. Duree of the Northern Natural Gas Co., Omaha, Neb., when addressing the Natural Gas convention at Memphis recently, paid tribute to the importance of the telephone in natural gas transmission as follows:

"Perhaps the most important one fact in successful operation of a transmission system is the dependability of the telephone service available, as the importance of the pressure dispatcher's communication facilities cannot be overestimated.

He must be able, as he always has had to be, to have pressure increased or decreased from the wells in the gas field, as well as start up and shut down engines in compressor stations; and he must be advised as often as necessary as to pressure conditions at extreme market ends of the system and from any other point where operation requires pressure information.

Equally important, if not more so, is telephone communication necessary if trouble occurs at any point on the system, causing interruption to service. Field men must be called without delay. The point and nature of the trouble must be located and determined. Valves must be closed, and in case of a major interruption, points of gas delivery must be notified, and possibly large consumers switched to stand-by fuel. And if such interruption is to be successfully handled, all this communication must be done in a minimum of time."

And so we learn of another use of the telephone and something of the method of dispensing natural gas to consumers, which no doubt heretofore we have taken as a matter of course in the same way the average telephone user takes smooth, accurate and efficient telephone service, never giving thought to what goes on behind the scenes.

Questions from Illinois Operators

1. If the called party refuses to talk on a long distance call, is there a report charge?
2. Is misrepresentation chargeable?
3. Should time always be entered when an "NC" report is shown on ticket?
4. How many "DA" reports are entered on the face of the ticket?
5. Should we have to ring a distant operator a third time before she takes your call?

The answers to these traffic questions are given on page 27.

The Telephone as a Watch-Dog

SUPPOSE the telephone had not as yet been invented but there were available for installation in residences and business establishments a device by means of which the police, the fire department or a physician could be quickly summoned. There is no doubt that, under those conditions, millions of such devices would be rented in this country at a price near or perhaps as high as the rental of the telephone. Many Americans would never, at any price within reason, do without so valuable an instrument as that.

The telephone does all of that, of course, and a great deal more. Yet it is so customary—even, to some extent, among telephone people themselves—to look upon the telephone as a device primarily for business and social conversation, that its great protective value is often unconsciously minimized.

IN ALMOST every telephone rate case there is at least some argument about the value of a telephone to the subscriber. It is perhaps possible to come within striking distance of the value of a telephone to any given business for conversational purposes only. One might, perhaps, estimate the conversational value of the telephone to a given home. In either case the value for convenience in conversation alone is usually much more than the cost.

But who can arrive at the value in dollars and cents of precious minutes saved by the telephone in bringing medical assistance when those minutes may mean the difference between life and death to a loved one? Who can appraise in dollars the agony and sorrow the head of a family may suffer throughout the remainder of his life because he failed to provide the instrument that would have brought the doctor in time?

IF YOU HAVE not already done so, take the trouble to read the files of newspaper clippings that are available concerning fires, accidents, cases of sudden illness, burglaries, and other happenings which are a part of the daily life of the nation. One will learn that in innumerable instances—perhaps a majority of them—the telephone has been the medium for summoning assistance which was, at the moment, beyond all price. One will undoubtedly finish the reading with a healthy respect for the protective value of the telephone.

One does not need, in fact, to read clippings of past happenings, but merely to watch the newspapers day by day. Every day they tell of the usefulness, in one way or another, of the telephone in saving life and property—a usefulness that cannot be measured in dollars and cents.

The announcement recently made in TELEPHONY of the plan now being worked out between telephone people and fire insurance companies, for greater protection against farm fires, is a case very much in point. The very fact that this project has reached its present point of recognition by the insurance companies is proof of the high protective value of the telephone.

IT IS DOUBTFUL if telephone people themselves recognize in all possible ways the great value and usefulness of the telephone as a protective device. They are so accustomed, as telephone patrons also are, to considering the telephone as primarily an instrument for ordinary conversational purposes that its protection value is overshadowed by the thought of its commoner, every day use. In this situation there may lie a valuable latent argument for the sale of telephone service.

Some people convince themselves that it is cheaper to carry their messages personally—or let them be undelivered—than it is to have a telephone. This is certainly a debatable question. As an illustration of the fallacy of the idea, if, for the want of a telephone, the family automobile is driven an extra 50 or more miles a month, as it usually is in such cases, the additional cost of the use of the car is ordinarily as much as, or more than, the cost of a telephone.

THE FACT is that no one can afford to be without a telephone in order to save money. There is, in the average case, no saving in actual dollars and cents in doing without a telephone.

If the business or household has need for any contact at all with other people—and, of course, every business and household has—the actual expenditure in money for maintaining such contacts in other ways than by telephoning will usually be as much as or more than the cost of a telephone. This takes no account of the time saved—and the time of anybody is worth something—and no account whatever of the protective value of the telephone.

It is possible that telephone companies are overlooking an important sales point in not stressing more than they do, in their selling arguments and campaigns, the protective value of the telephone.

The matter is at least worth thinking about. It would probably pay every telephone company that is carrying on any sort of activity for increasing its telephones to stress with its own salesmen—whether they be members of the organization or specialists—the protective value of the telephone.

That value is too frequently overlooked or unconsciously minimized. Yet it is one of the telephone's greatest values. It justifies the telephone's idle time.

Items	Month of June 1935	1934†	Increase or Decrease (*) Amount	Ratio Pct.	Six months ended with June 1935†	1934†	Increase or Decrease (*) Amount	Ratio Pct.
Number of carrier telephones in service at end of month	14,335,133	14,016,423	318,710	2.3	.....	.....	.....	...
OPERATING REVENUES:								
Subscribers' station revenues	$50,587,823	$33,660,179	$16,927,644	50.3	$304,167,363	$282,294,198	$21,873,165	7.7
Public telephone revenues	3,417,871	3,400,022	17,849	0.5	20,839,322	20,668,408	170.914	0.8
Miscellaneous local service revenues	863,115	955,799	*92,684	*9.7	5,134,688	5,671,605	*536,917	*9.5
Message tolls	20,568,900	19,968,442	600,458	3.0	120,168,037	117,355,126	2,812,911	2.4
Miscellaneous toll service revenues	2,417,042	2,420,341	*3,299	*0.1	14,480,522	15,045,340	*564,818	*3.8
Revenues from general services and licenses	1,065,565	602,670	462,895	76.8	6,279,518	5,695,382	584,136	10.3
Sundry miscellaneous revenues	3,154,124	2,944,314	209,810	7.1	18,749,860	17,587,725	1,162,135	6.6
Uncollectible operating revenues—Dr.	317,906	*674,738	992,644	...	2,012,560	1,496,984	515,576	34.4
Operating revenues	$81,756,534	$64,626,505	$17,130,029	26.5	$487,806,750	$462,820,800	$24,985,950	5.4
OPERATING EXPENSES:								
Depreciation and extraordinary retirements	$14,672,513	*$ 1,342,548	$16,015,061	...	$87,859,411	$71,693,490	$16,165,921	22.5
All other maintenance	14,530,984	14,912,091	*381,107	*2.6	87,624,128	86,853,523	770,605	0.9
Traffic expenses	11,248,725	11,088,834	159,891	1.4	66,836,932	65,266,688	1,570,244	2.4
Commercial expenses	6,365,452	6,071,968	293,484	4.8	38,127,611	36,606,383	1,521,228	4.2
General office salaries and expenses	4,444,811	3,944,932	499,879	12.7	27,510,522	23,736,722	3,773,800	15.9
General services and licenses	1,035,135	578,867	456,268	78.8	6,101,405	5,527,949	573,456	10.4
All other operating expenses	5,145,391	4,848,482	296,909	6.1	30,476,913	28,732,183	1,744,730	6.1
Operating expenses	$57,443,011	$40,102,626	$17,340,385	43.2	$344,536,922	$318,416,938	$26,119,984	8.2
INCOME ITEMS:								
Net operating revenues	$24,313,523	$24,523,879	*$210,356	*0.9	$143,269,828	$144,403,862	*$1,134,034	*0.8
Rent from lease of operating property	165	116	49	42.2	1,246	863	383	44.4
Rent for lease of operating property	7,042	7,792	*750	*9.6	42,598	46,002	*3,404	*7.4
Net operating income before tax deduction	$24,306,646	$24,516,203	*$209,557	*0.9	$143,228,476	$144,358,723	*$1,130,247	*0.8
Operating taxes	8,281,834	7,607,442	674,392	8.9	49,552,874	47,446,486	2,106,388	4.4
Net operating income	$16,024,812	$16,908,761	*$883,949	*5.2	$ 93,675,602	$ 96,912,237	*$3,236,635	*3.3
Ratio of expenses to revenues, per cent	70.26	62.05	8.21	...	70.63	68.80	1.83	...
CHANGES IN CAPITAL ITEMS:								
Increase during month:								
In "Telephone plant"	$1,039,586	$2,038,451	.....	...	$6,428,745	$ 5,122,926	.....	...
In "Capital stock"	.....	500	.....	...	*317,805	20,002,100	.....	...
In "Funded debt"	*1,223,000	*62,585	.....	...	*2,870,070	*1,037,985	.....	...

†Returns in this column reflect adjustments covering estimated refunds.

Table of Comparative Statistics Compiled from June Reports of 59 Class A Companies to the Federal Communications Commission

Financial Operating News and Data

A. T. & T. Co. Maintains Its Regular Dividend Rate

The directors of the American Telephone & Telegraph Co. on August 21 maintained the company's record of leaving the $9 annual dividend undisturbed through the depression years, when they authorized payment of the usual quarterly distribution of $2.25 a share.

The distribution will be made October 15 to shareholders of record September 16. A total of 18,662,275 shares is outstanding in the hands of some 675,000 stockholders, who will share in the payment which aggregates approximately $42,000,000.

Although earnings are expected to show some improvement over the third quarter of last year, there is no expectation that the net for the period will be equal to the amount of the dividend.

One of the few large industrial corporations to go through the depression without lowering its dividend rate, the A. T. & T. has maintained its disbursements of $9 annually since 1921. Since 1930, however, the company has been forced to dip into surplus in order to meet the difference between earnings and the dividend requirements. In spite of this, cash reserves at the end of 1934 were in excess of $250,000,000.

Net income amounted to $59,034,406 in the first six months of 1935, compared with $61,916,697 in the like period of 1934. Earnings of the Bell System, applicable to A. T. & T. stock, however, were equal to $2.72 a share in the first five months of this year, as against $2.68 in the same period of 1934.

The system reported a net gain of 201,000 telephones in service during the first half of 1935 and on June 30 the total was 13,580,000, or approximately 13 per cent less than the maximum development reached in 1930. Although there was a net loss of stations (22,800) in July, the decline was of a seasonal nature and usually is followed by a large gain in September.

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Six Months' Report For Class A Companies

The June monthly reports of 59 Class A telephone companies filed with the accounting, statistical and tariff department of the Federal Communications Commission, Washington, D. C., show that there were 14,335,133 telephones in service in the United States at the end of June as compared with 14,016,423 at the end of June, 1934. This is an increase of 318,710, or 2.3 per cent.

Operating revenues for June amounted to $81,756,534 as compared with $64,626,505 for June, 1934, an increase of $17,130,029 or 26.5 per cent. Operating expenses for June of this year were $57,433,011 as compared with $40,102,626 for June, 1934, an increase of $17,340,385 or 43.2 per cent.

After deducting taxes and all other expenses, net operating income amounted to $16,024,812 for June, 1935, as compared with $16,908,761 for June of last year, a decrease of $883,949, or 5.2 per cent.

For the six-months' period of this year ending with June, operating revenues were $487,806,750 as compared with $462,820,800 for the corresponding period of last year, an increase of $24,985,950 or 5.4 per cent. Operating ex-

penses for the first six months of this year amounted to $344,536,922 as compared with $318,416,938 for the same period last year, an increase of $26,119,984 or 8.2 per cent.

After deducting taxes and all other items of expense, net operating income for the first six months of this year amounted to $93,675,602 as compared with $96,912,237 for the corresponding period of 1934, a decrease of $3,236,635 or 3.3 per cent. Some of the returns for 1934 and early in 1935 reflect adjustments covering estimated refunds by some companies which lost their rate cases.

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Current Prices on Listed Telephone Stocks

	August 24, 1935 High	Low	Last
American Telephone & Telegraph Co.	140⅝	135⅛	135¾
Bell Telephone Co. of Canada	131¾	131½	131½
Bell Telephone Co. of Pennsylvania, pfd.	119	118¾	119
International Telephone & Telegraph Corp.	12⅝	10¼	10½
New York Telephone Co., pfd.	119⅞	119	119⅞
Pacific Telephone & Telegraph Co.	112	111	111
Pacific Telephone & Telegraph Co., pfd.	133½	133½	133½

BID AND ASKED QUOTATIONS.

	Bid Aug. 24	Asked Aug. 24	Bid Aug. 23
Lincoln Telephone & Telegraph Co. (7)	94	...	93½
Mountain States Telephone & Telegraph Co. (8)	127½	129½	128
Northwestern Bell Telephone Co. pfd. (6.50)	115	116½	115
Peninsular Telephone Co.,	107⅛	11¾	11⅝
Peninsular Telephone Co., pfd. A	98½	101	98
Rochester Telephone Corp., 1st pfd. (6½)	109	...	109
Southern New England Telephone Co. (6)	122½	124½	122½
Wisconsin Telephone Co., pfd. A (7)	114½	...	114½

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Earnings of Nebraska Companies for 1935

A $2214 deficit for the first six months of 1935 is reported to the Nebraska State Railway Commission by the Farmers Telephone Association, of Aurora, Neb. Exchange revenues totaled $19,005; toll, $1138; and total revenues were $20,210. Total operating expenses of $21,313 were made up of maintenance and depreciation, $10,500; traffic, $6485; and commercial and general expenses, $4383.

The company has a fixed investment of $155,658 and total assets of $180,228. Preferred stock totals $7000 and common, $48,630. The company has a depreciation reserve of $24,688 and a surplus of $78,748. The average investment per station is $154.67; the average revenue per station is $1.34, and the average operating expense per station is $1.47.

The Nebraska Continental Telephone Co., of Columbus, shows a profit of $3602 from operations during the first seven months of this year. The company has a fixed investment of $244,745 and total assets of $320,194. Common stock outstanding is valued at $68,666. The company has a depreciation reserve of $152,620 and a surplus of $83,803.

Exchange revenues totaled $22,870 during seven months of 1935 and toll, $6550. Total telephone revenues were $29,420. Total telephone expenses were $24,928, made up of maintenance and depreciation, $11,200; traffic expense, $7544 and commercial and general expenses of $6184. Total telephone income of $4492 was reduced $980 by taxes paid.

The Central Nebraska Telephone Co. of Grant, reports a loss of $3228 for the first six months of 1935. The company has a fixed investment of $159,617 and total assets of $163,053. Common stock outstanding is valued at $152,000; depreciation reserve, $21,381; and surplus (red), $22,798.

Exchange revenues were $11,242; toll, $1866; and total revenues, $13,459. Telephone expenses were $15,785, made up of depreciation and maintenance, $7100; traffic expense, $3196 and commercial and general expenses, $5488. Net telephone earnings (red) were $2325, and deductions for taxes and bad debts increased the deficit to $3228.

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Annual Report of Manitoba Telephone System

A definite upward trend in business is revealed in an analysis of the annual report of the Manitoba Telephone System, with its headquarters in Winnipeg, for the fiscal year ended November 30, 1934. Toll revenues showed an increase of 6 per cent over the preceding year and operating revenues an increase of 40 per cent.

Although the year ended with a small loss in the total number of subscribers, the gain has been constant since last summer, with business stations—including private branch exchanges—leading. The radio department made a remarkable showing, finishing the year with a net profit of nearly $15,000. The Winnipeg radio broadcasting station, operated by the Manitoba Telephone System, is the highest powered station in Canada.

The Manitoba Telephone System had a total of 58,564 telephones in service on November 30, 1934, a decrease of 943 stations. This compares favorably with the preceding year which closed with a net loss of 5,764 stations. The system comprises 124 central offices and employs 978 men and women.

J. E. Lowry, commissioner of telephones for the Manitoba Telephone System, points out that a considerable factor in the good showing for 1934 was the adoption of measured rural telephone service. The system now furnishes 4,032 subscribers with this type of service. The past year actually resulted in a net increase of 131 rural stations.

The report makes the interesting revelation that storm damage was far below that of previous years, amounting to $32,691 as compared with an annual average of $143,400 for the preceding five years. This loss was reduced not entirely by weather conditions but by a more substantial type of construction.

While there has been a considerable reduction in the total number of subscribers in the city of Winnipeg, it is noted that the total number of calls has actually increased. This indicates, no doubt, an increase in telephone "borrowing" and in the use of public pay stations.

The assets of the Manitoba Telephone System, totalling $33,456,786, include the following: Plant, $21,973,896; office furniture and fixtures, $79,931; tools and vehicles, $221,551; supplies, $585,453; cash and deposits, $421,614; accounts receivable, $176,549; prepaid expenses, $19,605; replacement trust fund, $102,985; sinking fund, $1,237,585; investment securities at par, $7,499,047; intangible capital, $1,138,568.

The liabilities consist of these items: Government investment, $22,855,283; accounts payable, $54,120; unearned revenue, $144,117; accrued liabilities not due, $87,659; replacement and other reserves, $7,636,108; replacement reserves appropriated for sinking fund, $1,237,585; replacement reserves invested in plant, $1,300,000; special reserve, $77,097; surplus, $64,816.

The condensed earnings report for the 12 months ending November 30, 1934, follows:

Revenue—		
Exchange revenue	$2,315,468.91	
Toll revenue	435,124.26	
Sundry net earnings	46,391.05	
Total revenue		$2,796,984.22
Expenses—		
Operation	$ 722,167.31	
Current maintenance	699,779.13	
Taxes	1,343.66	
Total current expense		1,423,290.10
Net telephone earnings		$1,373,694.12
Interest charges for year—		
Bond interest	$1,053,241.69	
Interest on replacement reserve loan	58,500.00	
		1,111,741.69
Operating surplus before making charge for plant replacement		$ 261,952.43
Replacement charge for year as per order of municipal and public utility bond No. 1112		$ 261,952.43

Safety Test No. 6

By JAKE THE LINEMAN

MORNIN' BUDDIES! Shortly after the appearance of Safety Test No. 5 in the July 27 issue of TELEPHONY, I received a brief note from one of our buddies which read as follows: "Jake, your questions sure cover some timely subjects. I had barely finished reading your questions in Test No. 5 when an accident similar to the one which you described in the third question happened not far from where I was working. Keep up the good work! By giving us tests you are preparing us to avoid accidents which are occurring daily."

Attached to the buddy's letter was a report covering an accident which recently occurred in his locality: An employe of a light and power company had entered a subterranean regulator pit to adjust the gas pressure for night load conditions. It was a safety rule of the company that two men make the trip to the regulator, so one man waited on the outside of the pit while the other worker went down to make the adjustment. After making the adjustment the employe was returning to the ladder when he slumped and fell to the concrete floor.

The man on the outside saw him fall and, from the report, he evidently did not waste any time. He ran to his truck, procured a rope and then, yelling at the top of his voice to attract the attention of residents, he returned to the pit and entered it. Hastily he secured a rope around his companion's shoulders and in less time than it takes to say "Jack Robinson" he had removed the victim from the pit. He immediately started artificial respiration and when the ambulance arrived the patient was breathing and in fair condition.

Buddies, in that accident report there lies a good lesson on the value of *being prepared*. Suppose the man on the outside of the pit had not known the correct method of removing a person from a gassy pit or manhole; or, suppose he had not known how to apply artificial respiration. Old Man Accident would probably have added another victim to his list and the victim's companion would have always blamed himself for not being prepared for the unexpected accident.

You buddies who participated in our last test were given the correct method for removing a fellow employe from a gassy manhole and in the past you have been given the facts about artificial respiration. The accident just cited proves the desirability of learning all that we can about the two subjects—and there is where our safety tests come in handy.

Our questions are not haphazard ones which have no bearing upon our work, but are questions which have been selected because accident reports indicate that many employes are not thoroughly familiar with the correct answers to them. What better method is there of doing away with some careless practice, which was the contributing cause of an accident, than to find out if other workers know better than to use it?

So far our tests have helped many a telephone worker to discover that he was performing some bit of his everyday work in a manner which had caused another worker to have an accident. And you can bet your "Old Brown Derby" that most of the careless habits were discarded as soon as they were discovered.

Do some of the points of telephone safety bother you? Do many of the routines seem to be unnecessary? If so, why don't you get in on the tests? Many of those troublesome points will be cleared up and you will get the answers to many of those questions which you have often asked yourself.

Come on, get in line, buddy. Let's beat Old Man Accident to the draw by learning all of the answers. Every telephone worker is eligible to participate and every telephone company is eligible to send in the group answers of their employes. Every participant in Test No. 6 will receive a copy of the correct answers and his graded paper will be returned. In addition to receiving the answers every participant has a chance to make "The Honor Roll" which is published in TELEPHONY at the same time the answers are printed.

In order that I can handle every detail of the test as promptly as possible please observe the following rules:

1. Study all questions carefully. Make sure you answer every part of each question.
2. Write out the answers in any form, just write them. Then send in to Jake, The Lineman, care of TELEPHONY, 608 South Dearborn Street, Chicago, Ill.
3. Attach a self-addressed, stamped envelope to your answers. This envelope will be used to return your corrected paper and your copy of the correct answers.
4. Please endeavor to send your answers in not later than September 10.

And now for the questions. Put on your thinkin' caps, buddies, here they come:

1. Is it a safe practice, while working on strand, to use a ladder which when placed in position barely reaches the strand or extends only one rung past the strand? Explain your answer fully.
2. In connection with performing work upon which a ladder must be used, should a worker ever—
   (A) Carry tools or material in his hand while ascending or descending the ladder?
   (B) Descend the ladder with his back facing the rungs?
   (C) Grasp the side rails of the ladder instead of the rungs?
   (D) Attempt to climb the ladder while his shoes are coated with mud or snow?
3. When it is necessary to change your location on a pole, should you unfasten your safety strap? If so, how should the weight of your body be supported?
4. Describe in complete detail how you would proceed to raise a cable car from the ground and place it safely on the strand. On this job you have a helper to assist you, the car has been inspected and is in A-1 condition and the path through which you are to ride the car has been thoroughly inspected for hazards. Your job is to get the car on the strand.
5. Let's put the imagination to work and imagine that, whether we like it or not, we are going to have to drill a hole in a brick wall. With a pencil or crayon we have marked the exact location of the hole and we are just about ready to start. Before starting should we inspect our drill and drill holder for defects? If so, what defects should we be on the lookout for? What defects should we look for on our striking hammer? Should we wear our goggles?
6. In your opinion how could the accident described below have been prevented? "A line gang was dismantling an open wire pole line. The wires were being cut and dropped to the ground. One of the wires fell on a booth which had been placed under the line by the trolley company for dispatching purposes. At the back of the booth a 550-volt wire entered the booth and was used to supply lighting current. This wire had not been noticed and a telephone wire which had been dropped from the pole came in contact with the 'hot' wire.

   A lineman and a groundman were picking up the cut wires and coiling them for removal to the storeroom. They finally reached the wire which was in direct contact with the 550-volt lighting circuit wire. Not realizing the danger, both of the men grasped the wire and received shocks and electrical burns which caused their death."
7. It has become the practice, in recent years, for state and city officials to make some street intersections into "your-way-stops." That is, "STOP" signs are placed on all four corners of the intersection so that a motorist whether he comes from the north, south, east or west is forced to come to a complete stop before proceeding. In your opinion,

do such restrictions increase or decrease the possibility of collision? Suppose four cars reach the intersection at the same time, which car has the right to proceed first? (Note: Better think this one over carefully. It's a real sticker, but it is important that all of us know the correct answer.)

8. Is it safe to perform work on a pole while a handline is hanging from your belt? Explain.
9. Each year when the accident results are summarized it is discovered that many workers have suffered hernias during the year. Most of the sufferers have brought on their condition by lifting heavy objects. It is therefore important that all of us know how to correctly lift heavy objects. Suppose it is your job to lift a box of insulators from the ground and set it inside the supply truck. What position would you take preparatory to lifting the box? Describe fully.
10. Describe some incident in either your own telephone experience or some fellow worker's experience which proves that safety or first-aid training is valuable. The best descriptions will be used in our next "Conference Table" discussion of safety and full credit will be given to those whose descriptions are selected as the best.

Well, thar they be, buddies, and I hope that every telephone worker will find time to sit down and write out the answers to the questions. Practically every question which is asked, is based upon a careless practice which has caused an accident.

By answering the questions careless practices are driven home to you in a manner which will lead you to substitute safe practices for them.

Wa'll, I'll get goin', but I'll be back soon. Until then remember: "Knowledge is more than equivalent to force."

Here and There In Telephone Work

Wisconsin Operators Cause Arrest of Murder Suspect

"The prompt action of the telephone operators (and TELEPHONY adds, *a telephone* in the home) was very instrumental in this case as it is in so many others."

This sentence was contained in an account—published in the Banner Journal of Black River Falls, Wis., of August 21—of the capture by local police officers of a man, believed to be the murderer of a filling station attendant, through the quick wit and resourcefulness of the night operator of the Fairchild exchange of the Community Telephone Co. of Wisconsin, and the cooperation of the night operator at Black River Falls.

Early in the morning of August 21, about 5:30 a. m., Mrs. Ruby Bahr, night operator at Fairchild, was puzzled to receive no answer when a switchboard drop fell and she had plugged in and said, "Number, please?" Hearing pistol shots, she watched closely at the window and saw a green sedan driving by in the direction of Black River Falls. Suspecting trouble of some nature, she noted the license number and immediately telephoned the sheriff at Black River Falls, describing the car and telling of the unanswered drop on the switchboard and the pistol shots.

Mrs. Minnie Blencoe, night operator at Black River Falls, likewise did some quick thinking and acting. Noting the license number of the car in question and the description as given by Mrs. Bahr to the sheriff, she telephoned a number of filling station attendants along the highway between Fairchild and Black River Falls, asking them to watch out for the driver of a green sedan and to cooperate with the Black River Falls sheriff, if possible, in his apprehension.

Sheriff George Dettinger, upon receiving the message from the Fairchild operator, drove downtown in Black River Falls, picked up Marshall Olaf Waldum and started driving north on Highway 12. As they were passing a Texaco oil station they were signaled by the attendant, Roy Peterson, who was in the act of filling the gasoline tank of a green sedan. He had noted the car number as being that of the car whose occupants were under suspicion, having had a telephone call from the Black River Falls operator a short time previously, relaying the information received from the Fairchild operator.

After the driver of the green sedan had been taken into custody, it was learned that Dan Cattanach, 55-year-old attendant of the oil station at Fairchild, had been killed, presumably by the bullet shots heard by the Fairchild operator. The victim resided alongside of the filling station. He is understood to have said he would "get" the next one stealing gasoline from his pump.

When someone was heard tampering with his pump at 5:30 in the morning, he got his gun and set out to find out who it was. Apparently he fired several times and the gasoline thief fired one shot from his revolver, which proved fatal to Mr. Cattanach. Two guns were found in the suspect's car and one empty shell.

Hearing the disturbance, Mrs. Cattanach had taken the telephone receiver off the switchhook in order to summon help. Perhaps the fatal shot which killed her husband was fired the next moment or two, for she left the telephone without waiting to complete the call.

Mrs. Bahr, the local night operator, sensed trouble in view of the unanswered drop on the switchboard and the pistol shots which ensued, and spread the alarm to the police officer in Black River Falls which resulted in the speedy apprehension of the gasoline thief and murder suspect.

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"Wired Radio" Programs Over Electric Light Wires

Programs from a central studio in Cleveland, Ohio, are being sent on a commercial basis over electric light wires to a "few subscribers" in the Lakewood section of the city, it was stated recently by a representative of the North American Co. in New York. This company, through its subsidiary, Wired Radio, Inc., has been experimenting with this type of entertainment dissemination for several years.

It was revealed that another subsidiary of North American has been formed in Ohio under the name of "Musak," which distributes the programs on the basis of a monthly charge of about $1.50.

Since the entertainment is sent over the same wires that carry the electric lighting current into homes, the sets which reproduce the programs are plugged into the light socket like any other electrical appliance.

C. W. Hough, engineer and executive of the North American Co., is president of both Wired Radio and Musak; Waddill Catchings of New York, is chairman of the board, and H. D. H. McConnick is vice-president.

The plan is to operate the "entertainment by wire" presentations in a small way to "see how the idea develops among the subscribers of Lakewood," the North American representative said. No advertising is accepted and the rules require that announcements be kept at a minimum.

"Wired radio" sets are not sold, but

(*Please turn to page* 34)

Ballast Resistance Feeding Bridge And Transmission Efficiency

By D. A. CHRISTIAN
Siemens Brothers & Co., Ltd., Woolwich, England

A MODERN telephone system should be capable of providing a transmission efficiency which cannot fall below a predetermined minimum on any possible connection. In

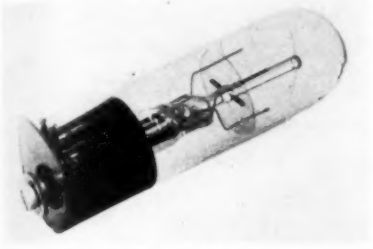


Fig. 1. Ballast Resistance Developed by the Company's Lamp Works at Preston.

designing a system to fullfil this condition the transmission losses on all lines which may form part of a connection must be carefully considered so that no possible combination may fall below the predetermined minimum.

Thus, the greater is the loss incurred on the exchange to subscribers' lines, the less must be the loss incurred on the inter-exchange lines. It is obvious, therefore, that the longer subscribers' lines have a determining influence on the general lay-out and cost of the system.

The ballast resistance feeding bridge provides a means whereby the transmission efficiency of the longer subscribers' lines can be increased, thereby improving the overall transmission efficiency of the system. The advantage thus gained may be utilized to reduce the cost of the inter-exchange lines, to permit longer subscribers' lines than would otherwise be possible; or to benefit the overall transmission efficiency as may be desired.

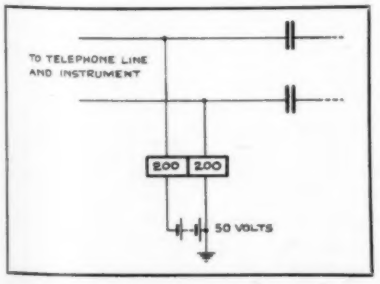


Fig. 2. Typical (Non-Ballast) Feeding Bridge for 50-Volt System.

The transmission efficiency of a subscriber's line and the instrument associated with it, involves both the efficiency of sending and the efficiency of receiving speech. The ballast resistance bridge improves the sending efficiency while leaving the receiving efficiency unimpaired.

Since the transmission efficiency of a connection always involves the sending efficiency of one line and the receiving efficiency of the other, according to the direction in which conversation is occurring, it will still be clear that an improvement in the sending efficiency provides an overall gain on any connection.

The sending efficiency, in turn, involves two factors: the production of the speech currents and the transmission of the speech currents from the telephone to the exchange. The production of the speech currents is, of course, a function of the transmitter of the telephone instrument and the efficiency of the transmitter is dependent on the value of the current flowing through it. If the current supplied to the transmitter from the exchange is too small, the transmission efficiency of the transmitter will be low; on the other hand, if the current is too large, the transmitter will tend to be noisy.

The ballast resistance feeding bridge provides a means of increasing the transmitter current on long lines without permitting too large a current to flow on short lines.

The feeding bridge is that part of a common battery telephone equipment by means of which the speech current is supplied to the line wires. Various types of feeding bridge have been devised, of which the most common is the impedance - capacity type, usually known as the "Stone" bridge and shown diagrammatically in Fig. 2.

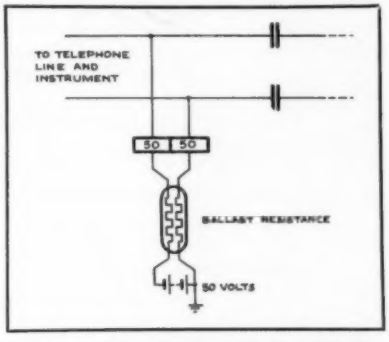


Fig. 3. Typical Ballast Feeding Bridge for 50-Volt System

The feeding bridges provided in an exchange are associated with the common equipment and, when a call is made, any one of a number of feeding bridges may be taken into use. From this it is obvious that all the bridges must be alike and none can be arranged to suit the characteristics of any individual line.

If the resistance of the bridges is high, the transmitter of telephones on

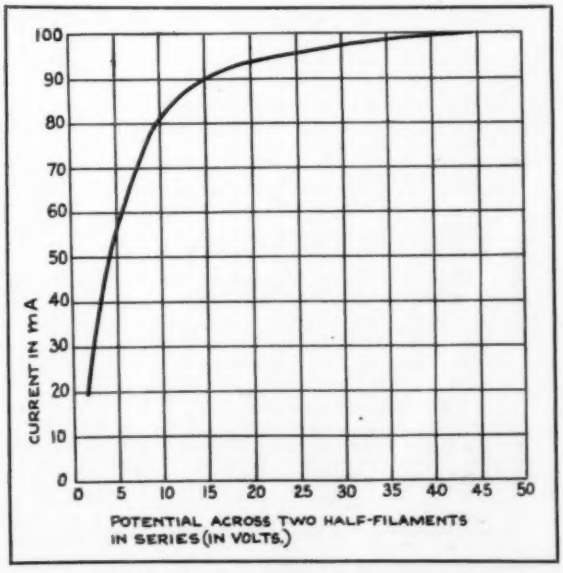


Fig. 4. Voltage/Current Characteristic of 100 mA. Twin-Filament Ballast Resistance.

long lines will receive too little current; if it is low, the transmitters on short lines will receive an excessive current. The actual current strength required to give the greatest transmission efficiency depends on the type of transmitter used. Generally it is in the region of 100 to 140 mA.

Since the loop currents constitute a very considerable proportion of the total exchange current consumption, it will be generally desirable to keep the average loop current somewhat below the value providing the very highest transmitter efficiency. Normally 100 mA. is found to be quite a satisfactory value; and it should, therefore, be a characteristic of the feeding bridge employed that while permitting the maximum possible current to flow over the line wires up to about 100 mA., it prevents the flow of any current above this value.

To obtain a maximum current on high-resistance lines, the resistance of the feeding coils must obviously be reduced, if the battery voltage is not to be increased. Such a measure alone, however, would provide the low-resistance lines with an altogether excessive current, which would not only prevent the transmitter from functioning satisfactorily, but would also cause dangerous heating of the feeding coils themselves.

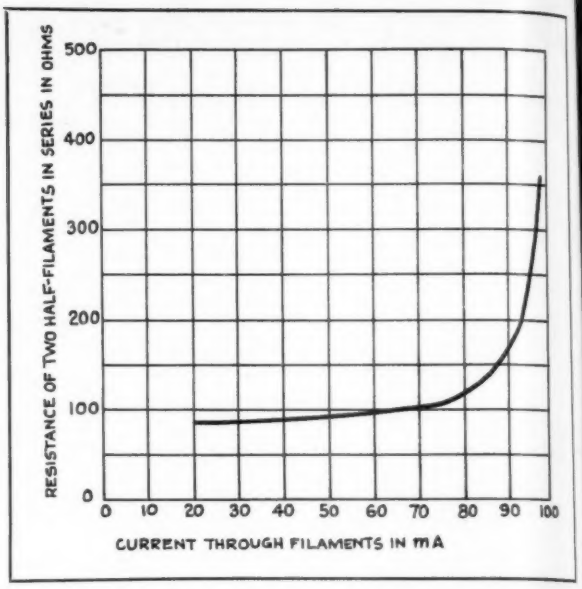


Fig. 5. Current/-Resistance Characteristic of 100 mA. Twin-Filament Ballast Resistance.

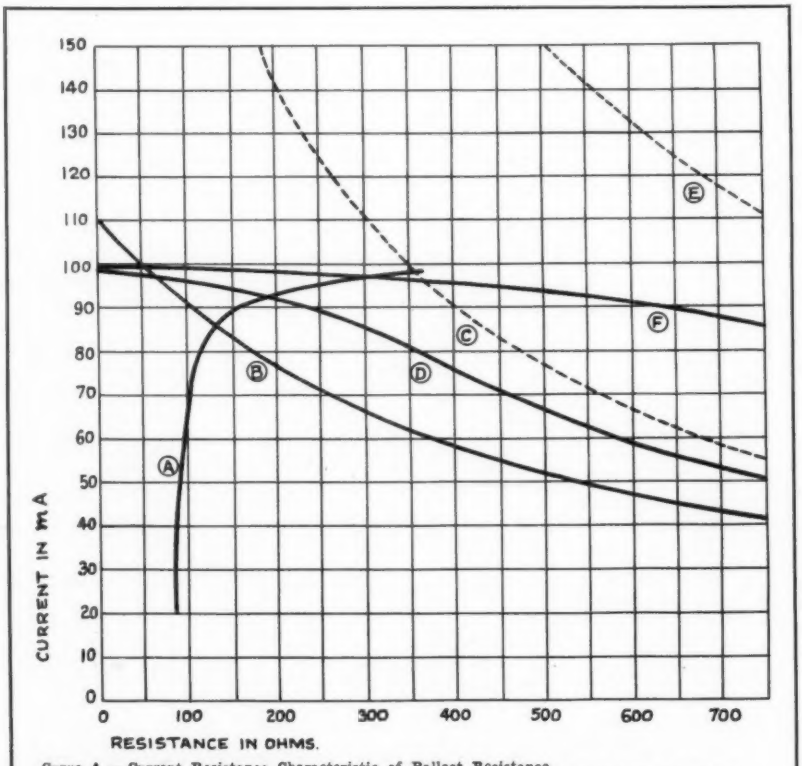
Moreover, with feeding coils of normal size it would be difficult to provide sufficient turns to give the impedance necessary to insure that as much as possible of the speech currents shall pass around the connection from telephone to telephone and as little as possible be shunted through the bridge.

These difficulties have now been surmounted by devising a feeding bridge normally of comparatively low resistance, but self-adjusting to the extent that its resistance increases when connected to a short line. It also maintains substantially the same impedance across the line as that of a normal non-ballast bridge. The self-adjusting feature is provided by a ballast resistance in series with the feeding coils, and the high-impedance feature by several nickel-iron sleeves fitted over the core of the coil. The diagram of a ballast resistance feeding bridge for a 50-volt system is shown in Fig. 3.

The Ballast Resistance

The type of ballast resistance referred to in this article and illustrated in Fig. 1 was specially developed by Siemens lamp works at Preston in collaboration with the company's telephone department at Woolwich, England. It is about three inches long and one inch in diameter and consists of a gas-filled glass bulb containing two metal half-filaments brought out to separate pairs of terminals, to which wires can be directly soldered. One half-filament is connected in series with the feeding coil on the negative side and the other in series with the coil on the positive side.

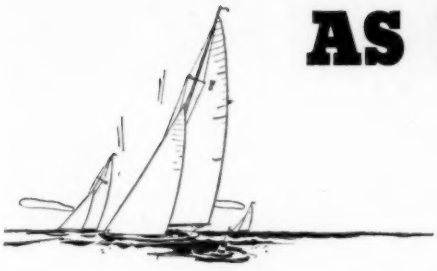
The circuit arrangements thus remain entirely symmetrical, special care being taken to insure that the two half-filaments have very similar characteristics. This is particularly essential, since even slight differences in the fila-



Curve A = Current Resistance Characteristic of Ballast Resistance.
Curve B = Current Against Loop Resistance for 50-Volt, 200 + 200 Ohm Non-Ballast Bridge.
Curve C = Current Against Loop Resistance for 50-Volt, 50 + 50 Ohm Non-Ballast Bridge.
Curve D = Current Against Loop Resistance for 50-Volt, 100 mA. Ballast Bridge.
Curve E = Current Against Loop Resistance for 100-Volt, 50 + 50 Non-Ballast Bridge.
Curve F = Current Against Loop Resistance for 100-Volt, 100 mA. Ballast Bridge.

Note: The loop resistances given by these curves do not include the resistance of the subscriber's instrument for which an extra 50 ohms is assumed.

Fig. 6. Curves Showing the Comparison of Loop Current With Different Feeding Bridge Conditions.



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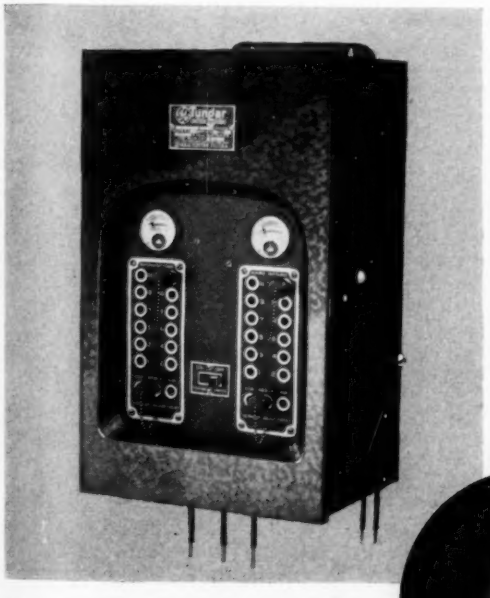
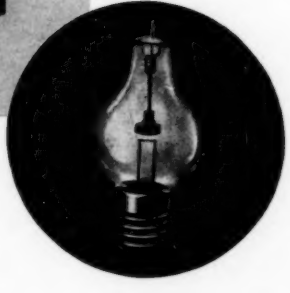


Model 6RB6B7—12-amp. capacity employing full-wave rectification plus external filter reactance. Quiet operation. Plug board control permits close adjustment of charging rate. Full load efficiency 76%.



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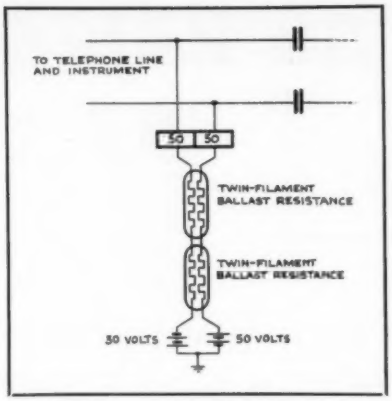

Fig. 7. Typical Ballast Feeding Bridge for 100 Volts.

ments would result in one filament commencing to ballast before the other, thus producing an out-of-balance at the line resistance concerned. The maximum out-of-balance permitted in the ballast resistance is only about 1 per cent of the total bridge impedance to speech-frequency currents. This is relatively small in comparison with the 5 per cent usually allowed for the complete bridge.

The characteristic property of the ballast resistance is that the resistance of the filament varies in such a way that it tends, within certain limits, to keep the current passing through it at a certain value. The electrical characteristics of the ballast resistance are shown in Figs. 4 and 5.

From Fig. 4 it will be seen that for low voltages, the current increases in approximately direct proportion to the voltage, thus indicating that the resistance is remaining constant. At higher voltages, however, the current ceases to increase at the normal rate, thus indicating that the resistance is also increasing. Fig. 5 shows the resistance of the filaments with different current values; the resistance, which is normally about 80 ohms, increases rapidly when the current reaches 80-90 mA.

The effect of the ballast bridge on the currents flowing in lines of different resistance is shown in Fig. 6, curve *A* being the current-resistance characteristic previously shown in Fig. 5. By including this characteristic in this figure, its effect on the line current can readily be seen and a convenient means is provided for obtaining curve *D*. Consider, for instance, the point where curves *A* and *C* intersect. At this point on *A* the current through the ballast resistance is approximately 100 mA., and its resistance is consequently about 350 ohms.

Since the ballast resistance is 350 ohms and the total loop resistance which gives 100 mA. is also 350 ohms, it follows that the line resistance which will give the current with the ballast resistance in circuit is zero. By similarly subtracting the resistance of the ballast resistance itself from each value of the total loop resistance as given by curve *C*, curve *D* can readily be obtained.

A further development that has already been introduced in special cases is the increase of the battery potential from 50 to 100 volts. A convenient method of providing this increase is to connect the line wire, which is normally at earth potential, to 50 volts positive potential, using for this purpose the 50-volt battery which is frequently provided in telephone equipments for operating the subscribers' meters. Under these circumstances two standard ballast resistances are connected in series, as shown in Fig. 7.

Owing to the comparatively recent development of the ballast resistance, its effective life has not yet been definitely ascertained. Samples have, however, been tested to the equivalent of 15 years' life in a busy telephone exchange without it being possible to detect any appreciable variation in the ballasting characteristics or the balance of the two half-filaments. Since even under short line conditions the filament glows only a dull red, a very considerably longer life can confidently be anticipated.

Under faulty conditions, the ballast

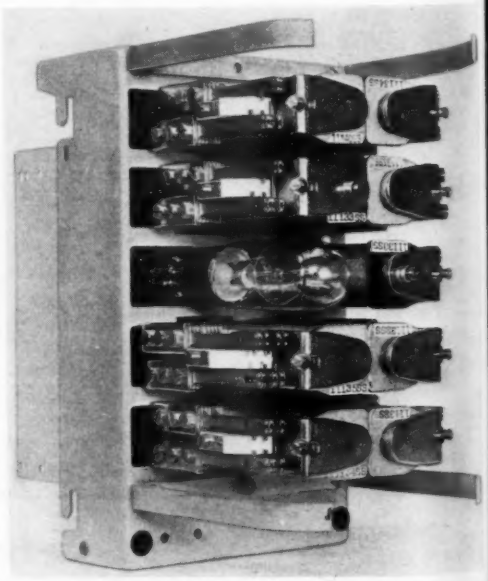

Fig. 8. Relay Set With Cover Removed Showing Ballast Resistance Fitted in Relay Position.

resistance may be subjected to higher current values than under normal operation. Tests show that under the condition of the negative wire becoming earthed, or even one of the half-filaments becoming connected directly across the 50-volt battery, the ballast resistance suffers no damage.

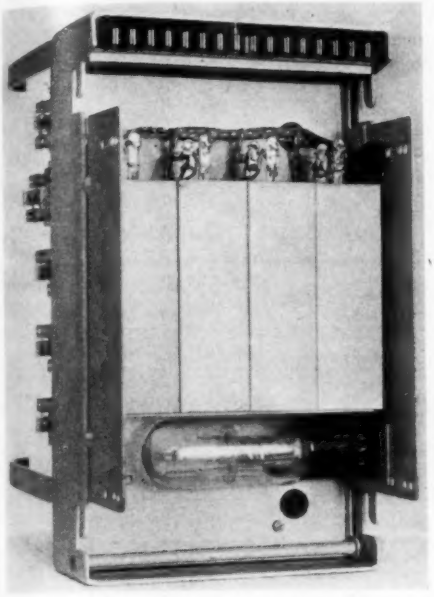

Fig. 9. Relay Set, Rear View, With Cover Removed, Showing Ballast Resistance Fitted at Bottom of Condenser Box.

The accommodation and mounting of the ballast resistance presents no difficulty, since it requires no more space than a standard telephone relay, and can be mounted on a plate having piercings for mounting relays. On account of its long life, however, and the consequent infrequent attention it requires, it is not essential for it to be mounted in a position as accessible as that provided for a relay; nor is it necessary to provide a spring contact mounting. Figs. 8 and 9 show a ballast resistance mounted in two alternative positions.

Construction of the Feeding Coils

Reducing the resistance of the feeding coils from 200 ohms to 50 ohms naturally involves a considerable reduction in the number of turns of wire on the coils, and such a reduction obviously also reduces the impedance. Actually, the impedance at speech frequency of an ordinary 50-ohm coil would normally be less than half that of a 200-ohm coil of a similar type.

Such a small impedance would considerably reduce the transmission efficiency of the system and thus would tend to counteract the advantages derived from the ballast resistance. This difficulty has been overcome by a method already developed by Siemens Brothers & Co., Ltd. It consists of the fitting of one or more nickel-iron sleeves over the iron core before the coil is wound.

It is well known that the magnetic fluctuations due to high-frequency currents do not penetrate deeply into a core of magnetic material. The provision of a surface layer of nickel-iron on a soft-iron core results in the main magnetic flux produced by the direct current being carried by the iron core, while the fluctuating flux due to the speech-frequency currents is carried by the nickel-iron sleeve.

This combination enables the relay to function exactly as an ordinary relay under direct current energization or impulsing, while at the same time offering a much higher impedance to speech frequency currents. By employing this method it is possible to obtain with the 50-ohm coil an impedance substantially the same as that given by a normal 200-ohm coil.

Transmission Improvement

As already explained, the improvement in transmission obtained by the use of the ballast bridge is in respect of the sending efficiency of the local line. The improvements achieved are shown in Fig. 10. In this figure the sending efficiencies are shown against the line resistance when using different types of feeding bridges; the instrument used being the "Neophone" type developed and produced by Siemens Brothers & Co., Ltd.

The efficiencies are indicated with reference to the present European standard, officially known as the "Système Fondamental Européen de Référence pour la Transmission Téléphonique," which is usually abbreviated to and known as the "SFERT."

From these curves it will be seen that the effect of the ballast bridge is to level up to a considerable extent the efficiency for different line resistances by increasing the efficiency of the lines of higher resistance. A comparison of the curves in Figs. 6 and 10 may at first give the impression that the full benefit is not being obtained, since curve *F* of Fig. 10, for instance, still shows a considerable decrease of efficiency with increasing line resistance, whereas curve *F* of Fig. 6 is much more level.

The explanation is that the sending reference equivalent includes not only the efficiency of the transmitter as a generator, but also that of the line as a carrier of the speech currents generated. The latter function, which is in no way concerned with the feeding

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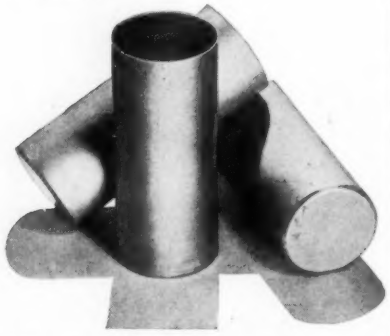

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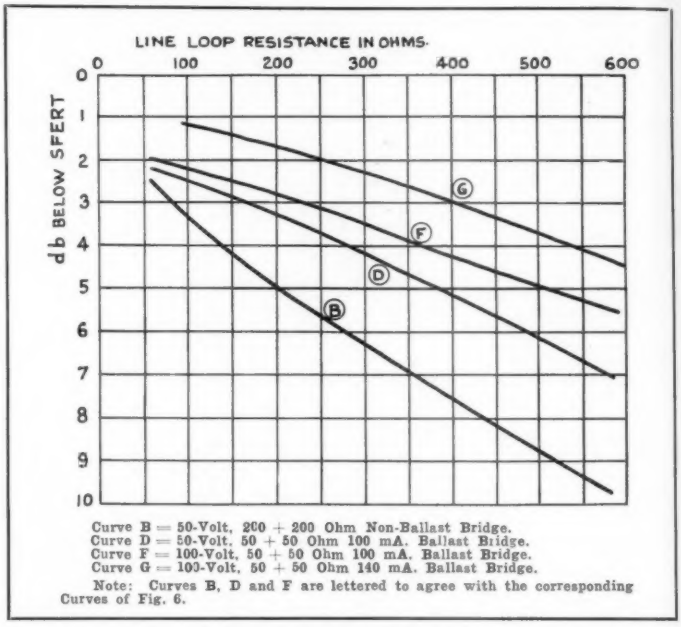
bridge, limits the improvement in the slope of the curves in Fig. 10, the slope of curve *F* being, in fact, very nearly the best obtainable.

The curves show an improvement of up to nearly 3 db. for the 50-volt ballast bridge as compared with the normal feeding bridge and a further improvement of about 1½ db. for the 100-volt ballast bridge.

All the preceding results are based on the use of a 100 mA. ballast resistance. Curve *G* of Fig. 10, however, shows the sending reference equivalent with a 100-volt 50 + 50 ohm 140 mA. ballast bridge. As would be expected, the improvement



Curve B = 50-Volt, 200 + 200 Ohm Non-Ballast Bridge.
Curve D = 50-Volt, 50 + 50 Ohm 100 mA. Ballast Bridge.
Curve F = 100-Volt, 50 + 50 Ohm 100 mA. Ballast Bridge.
Curve G = 100-Volt, 50 + 50 Ohm 140 mA. Ballast Bridge.

Note: Curves B, D and F are lettered to agree with the corresponding Curves of Fig. 6.

Fig. 10. Sending Reference Equivalents of Neophone With Different Feeding Bridge Conditions.

in this case shows a general increase of efficiency over the whole resistance range depicted.

The first exchange to be extensively equipped with ballast bridges was the Springfield exchange in the Birmingham area, where this innovation has proved entirely successful. This exchange, which is of the director type, has the calling side of the first code selector and the called side of the final selector bridge equipped with ballast resistance feeds.

The ballast bridge has also been adopted by the South African Post Office and is incorporated in the automatic trunk exchange installed by Siemens Brothers at Cape Town. In this instance the 100-volt 50 + 50 ohm 140 mA. type was selected.

• • •

Telephone Indispensable In "Fun Time"

"FUN TIME" is the subject of a most timely and attractive little folder which the Illinois Bell Telephone Co., of Chicago, is enclosing with its subscribers' bills. On the cover above the letters "FUN TIME," which appear to be tossed about on rolling waves of water, a pair of hands is engaged in balancing a blue and gold beach ball.

The inside of the folder, which opens up to a size measuring 3 by 5⅛ ins., shows a lunch basket in the lower right hand corner and in the upper left hand the rear end of an automobile. As on the cover, the illustrations are printed in blue and gold.

This message is contained on the inside of the folder: "Time to get together with friends you seldom see! Time to do something different with friends you see often! The woods, the rivers, the lakes are calling you. These precious outdoor days slip away and are lost easily. Even with the summer inertia it is no trouble to arrange an outing or a beach party by telephone. FRIENDS HERE AND IN NEARBY TOWNS ARE AT THE OTHER END OF THE WIRE."

On the back cover is printed this brief message: "Use the telephone to save time, get information and make your plans complete."

• • •

Iowa's 1936 Convention Scheduled for April

The Iowa Independent Telephone Association will hold its 1936 convention on April 7, 8 and 9, at the Hotel Fort Des Moines, in Des Moines, according to information from Secretary Chas. C. Deering.

Doings Of Various Commissions And Courts

FCC Order on Filing of Annual Reports

The Federal Communications Commission, on August 14, handed down Order No. 13 which provides that every carrier subject to the Communications Act of 1934 shall file an annual report by March 31 of each year for the 12 months ending on the 31st day of the preceding December. The order reads as follows:

"The commission having under consideration the subject of annual reports from carriers subject to the Communications Act of 1934 and from persons as defined in Section 3 (i) of said act, directly or indirectly controlling or controlled by, or under direct or indirect common control with, any such carrier.

It is ordered that each and every carrier subject to the Communications Act of 1934 and each and every person directly or indirectly controlling or controlled by, or under direct or indirect common control with, any such carrier shall make and file, in duplicate, with this commission, on or before the 31st day of March in each year, an annual report as provided in Section 219 of the Communications Act of 1934, covering the period of 12 months ending on the 31st day of December next prior to said date; provided, however, that annual reports for the period of 12 months ending on the 31st day of December, 1934, shall be made and filed with this commission by every such carrier and person on or before the 15th day of October, 1935.

It is further ordered, that the annual reports, as aforesaid, shall severally be in accordance with the blank forms of report adopted and furnished by the commission for the required returns and with the instructions in such forms, and shall contain full and specific answers to all questions propounded in said forms and all the information called for therein, whether by questions, or forms of tabular statements or otherwise."

• • •

San Antonio, Texas, Rate Case Still Unsettled

The Southwestern Bell Telephone Co. pressed firmly, but in vain, August 20, for Judge Edwin Holmes of Yazoo City, Miss., to sustain as valid a decree signed by him recording as settled out of court the litigation with the city of San Antonio, Texas, concerning reasonableness of telephone rates for local subscribers.

After hearing testimony with reference to conferences between the mayor and city commissioners and representatives of the telephone company concerning the city's decision to revoke a settlement it had entered into to end the litigation that has been in the courts since 1928, Judge Holmes sustained a motion of attorneys for the city of San Antonio to strike the compromise decree from the record. The telephone company excepted to the ruling.

After the city's settlement with the

Answers to the Traffic Questions on Page 11.

1. Yes.
2. It is, provided a chargeable report was given to the calling station within the time limit (1 hour from filing time), or provided the calling party secured information from the called station within the time limit which would constitute a chargeable report if given to the calling station by the calling operator.
3. Yes.
4. If, when the first attempt is made on the call, a "DA" report is received, it is entered on the face of the ticket. All subsequent "DA" reports are entered on the back of the ticket.
5. Ordinarily delays of this kind are unwarranted; however, they may occur occasionally under extraordinary conditions. If they happen frequently they should be referred to the chief operator in charge of the exchange where the delays occur.

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Inside or Outside

MOUNTED INSIDE—Cook "O" type is a miniature pole cable terminal and when mounted in a basement is fully enclosed, fireproof, free from dust, dirt, whitewash, condensation or bugs.

The grounded zinc hood eliminates any danger to the subscribers.

MOUNTED OUTSIDE — On the side of a building it prevents high potentials from entering the subscribers' premises. It is easily accessible to your maintenance crew, whether the subscriber is home or not.

The "O" type is designed for outdoor service. From the husky piece of porcelain, slotted to prevent cross talk, to the phosphor bronze springs and Everdur studs, there is not a part that can be effected by the most severe climatic conditions.

FOR FULL INFORMATION ON COOK "O" TYPE

ASK YOUR JOBBERS SALESMAN

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COOK ELECTRIC CO.
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company was revoked last June, the company immediately gave notice that the proposed rate reduction—a part of the agreement, which was scheduled to become effective July 1—had been abandoned. Since then subscribers have been billed at the rates made effective in 1928, which the city complained are unreasonable.

The court decided to hear exceptions to the findings of the special master, based on testimony adduced up to 1930. The city was given 30 days in which to file a brief noting its exceptions, the master's findings having been favorable to the telephone company. Attorneys of the company will have 30 days in which to reply, and Judge Holmes will return to San Antonio to give his ruling about November 1.

Carl Wright Johnson and Bruce Teagarden, special attorneys for San Antonio, told the court that after the city commission entered into an agreement last spring to compromise the suit in exchange for a small reduction in telephone rates and a 2 per cent annual gross revenue tax, it was decided to withdraw the settlement offer pending a referendum of the proposition in a popular vote of the people.

Judge Holmes frankly told attorneys for the litigants that the city's settlement and its subsequent withdrawal, after the compromise decree had been signed by the court and sent to the clerk for filing, probably had confused the record and made any judgment more susceptible to error. The Utility Users' League filed a protest against the compromise, whereupon the decree was immediately held up pending a hearing.

When the August 20 hearing opened, Judge Holmes told the litigants he had been advised the costs on the mandate—sent back by the Circuit Court of Appeals in reversing the trial court's judgment, which held for the city in its contention the company's rates prior to 1928 were not confiscatory—had not been paid. In writing the judgment Judge Holmes did not abide by the findings of the special master, the late J. B. Dibrell of Seugin, who had found the rates were confiscatory and that a new schedule, effective since February, 1928, were reasonable. The court was told the city would arrange to pay the costs immediately.

The appellate court sent the case back for more specific and detailed findings by the trial court, based on the master's report and ordered the evalution of the company's properties brought to date, from 1930, the judgment having been based on the record covering operations of the company from 1928 to 1930.

Judge Holmes decided that he will first hear exceptions to the master's report. He explained the record will be before him as it was before he entered his judgment for the city, setting aside the master's report, except that he will have "additional light shed on the report by the Circuit Court of Appeals' opinion, setting out certain principles of law which it is the duty of this court to follow."

After he hears the exceptions and rules on them, Judge Holmes will then decide about the manner of adducing testimony, whether before himself, a special master or a commissioner, to bring the record to date, covering the years 1931, 1932, 1933, 1934, and 1935.

Attorney E. W. Clausen, for the company, pointed out that while the litigation has been exceedingly costly to date, there would be a "great mass of additional testimony" bearing on subsequent years, involving an entirely new telephone plant, and new methods of operation, requiring much more time for explanation and more time to prepare. He estimated that the total cost of the suit to both sides of the litigation has been in excess of $500,000.

• • •

Complaint Withdrawn Regarding Toll Charges

The New York Public Service Commission has discontinued a proceeding brought by complaint of the East Rochester Chamber of Commerce against the Rochester Telephone Corp. regarding the 15-cent telephone rate from East Rochester to Rochester. The East Rochester Chamber of Commerce requested permission to withdraw the complaint following a conference with company officials, at which it was stated that an adjustment of the rate is expected in the near future.

The Rochester Telephone Corp. denied that the rate between East Rochester and Rochester is excessive in its answer to the complaint. The commission some time ago dismissed a similar complaint without prejudice to a reopening of the matter in connection with the determination of similar toll rates in the balance of the state at the proper time.

A report of Commissioner Maurice C. Burritt, now approved by the commission, points out that the complaint of the East Rochester Chamber of Commerce should also await an adjustment in rates for similar distances in the proceeding involving the rates of the New York Telephone Co. which is now pending before the commission or in any other more general investigation of telephone rates in a wider territory.

• • •

Refunds by Chesapeake Bell Nearly Completed

The Chesapeake & Potomac Telephone Co., of Washington, D. C., has nearly completed the work of refunding to its subscribers the sum of $1,060,620, in harmony with the ruling of the Supreme Court of the District of Columbia sustaining the 10 per cent rate reduction order of the public utilities commission. Only $742 of the total amount involved in the refund order has not been repaid.

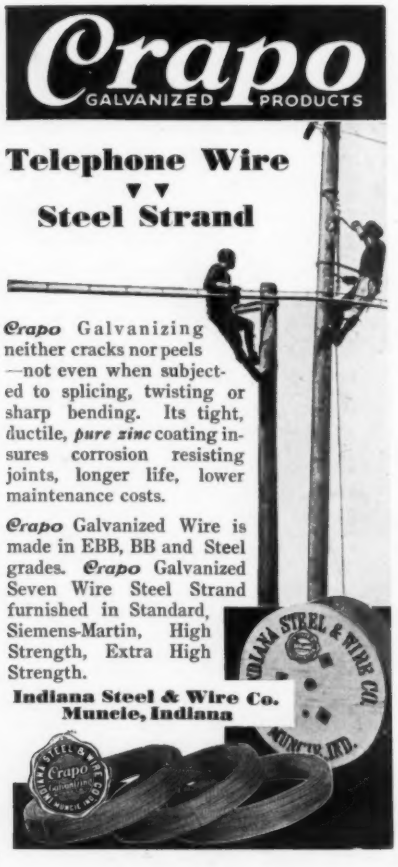
The order, which was handed down June 14, 1934, affected all subscribers excepting those having private branch exchanges or a total of 126,257. The mailing of the checks was started shortly before last Christmas.

• • •

Rules for Electric-Communication Construction

The Nebraska State Railway Commission, at a recent session, expressed its appreciation for what it called the effective painstaking work, conscientious effort and helpful results obtained by the Nebraska joint committee on physical relations between electric supply and signal lines which has completed a compilation and placed before the commission a set of rules and regulations covering electric supply and communication lines at public highways, crossings of railroad tracks and similar situations.

The work was undertaken months ago at the request of Bert C. Forbes, late commission engineer. These rules are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Crapo Galvanizing neither cracks nor peels—not even when subjected to splicing, twisting or sharp bending. Its tight, ductile, pure zinc coating insures corrosion resisting joints, longer life, lower maintenance costs.
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Muncie, Indiana
INDIANA STEEL & WIRE CO
MUNCIE, IND.

recommended by the committee for adoption by the commission to govern this type of construction, and will be later considered.

Mark T. Caster, plant superintendent of the Lincoln (Neb.) Telephone & Telegraph Co., who represents telephone interests on the committee, has been most active in the work. It represents a large amount of labor and expense on the part of the committee and the Nebraska utilities represented by the membership of the committee and other interested parties. This form of cooperative work has almost entirely eliminated disputes before the commission as to the respective duties and obligations of the companies in this type of contacts.

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Illinois Bell Seeks Refund on Sales Tax

A suit for injunction against certain state officials was filed in circuit court at Springfield, Ill., on August 23 by the Illinois Bell Telephone Co., asking that an order be issued for the state to refund $18,000 paid to the state treasurer in sales tax for July business. The sum asked is part of $150,000 paid by the company under protest on August 15 as the sales tax filed by the state for July business.

The company claims in the suit that $18,000 of the amount should not have been paid, contending it should be included in a certain class excluded by law.

• • •

Commission Rulings and Schedule of Hearings

FEDERAL COMMUNICATIONS COMMISSION.
WASHINGTON, D. C.

Aug. 14: Order issued directing each and every carrier subject to the Communications Act of 1934 to file with the commission in duplicate, on or before the 31st day of March in each year, an annual report as provided in section 219 of the act covering the 12 months' period ending on the 31st day of December prior to that date. It is required that the reports shall be in accordance with the blank forms of report adopted and furnished by the commission and shall contain full and specific answers to all questions propounded in such forms and all the information called for. No. 13.

August 16: The Chesapeake & Potomac Telephone Co. of Pennsylvania filed telephone tariff, revised pages to FCC No. 2, effective August 17. Pursuant to special permission granted by the commission on August 15, charges have been published for service from Narrows and Shumate, Va., to Meadow Bridge, W. Va.

August 16: The Chesapeake & Potomac Telephone Co. of West Virginia filed telephone tariff, revised page to FCC No. 2, effective August 17. Pursuant to special permission granted by the commission on August 15, charges have been published for service from Meadow Bridge, W. Va., to Shumate and Narrows, Va.

August 17: Southern Bell Telephone & Telegraph Co. filed telephone tariff, revised pages to FCC No. 1, effective August 31. Announces that Golden Springs and Gillis, Ala., will be established as rate centers.

August 17: Cincinnati & Suburban Bell Telephone Co. filed telephone tariff, revised pages to FCC No. 1, effective September 21. Announces that certain points in Indiana, Kentucky and Ohio will be established as rate centers; that Brownsville, Richland and Milton, Ind., will be discontinued as rate centers.

August 19: The Pacific Telephone & Telegraph Co. filed revised pages to FCC No. 1, effective August 27. Announces that Binns, Blair, Hale, Hirds, Homestake Mine, McDonald-Wallace, Mines Employment, Nicola Mines and Rotary Camp, British Columbia, will be established as toll stations on the lines of the British Columbia Telephone Co., a connecting carrier.

August 19: The Mountain States Telephone & Telegraph Co. filed revised pages to FCC No. 2, effective August 27. Announces that Two Gray Hills, N. M., Teec-Nos-Pos, Ariz., Aneth, Utah, Pole Mountain Nursery, Wyo., Storz Ranch, Colo., and Little Beaver Well, Mont., will be established as toll rate centers, and that the name of toll station Sand Springs, Colo., will be changed to Wileys Resort.

ARKANSAS.

August 12: Appeal filed by the Southwestern Bell Telephone Co. from an order of the Walnut Ridge City Council reducing telephone rates in that city,

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CHICAGO, ILL.

and the department issued an order suspending the rates pending an investigation.

The telephone company's appeal petition said the ordinance reducing rates was passed without notice to the company and that the company is operating the exchange which serves Walnut Ridge and Hoxie at a loss of $1,800 a year. The petition said rates fixed in the ordinance would reduce revenue approximately $2,000 a year.

The utilities commission required the company to post bond to protect telephone users in the event the commission finds the city's reduction justifiable.

The ordinance sought to reduce rates from $4.25 a month to $3 for a one-party business telephone, from $2.50 to $1.75 for a one-party residence line, and from $2 to $1.50 for a two-party residence line. The ordinance would reduce residence extensions from 75 cents to 50 cents.

NEW YORK.

August 21: The Rochester Telephone Corp. has filed revisions of its rate schedules which reduce minimum charges for seasonal service and abolish charges for desk-set telephones on common battery rural lines. The changes are effective in the central office districts of Canandaigua and Naples in Ontario county, Geneseo, Hemlock and Livonia in Livingston county, and Hamlin, Rochester and Webster in Monroe county.

The provision governing seasonal service is revised so that the minimum charge during any portion of the season is reduced from seven months to four months at the schedule rates. This will reduce revenues of about $1,200 a year. The 25-cent additional monthly charge for a desk-set is abolished for telephones on common battery rural lines. This charge is retained on magneto lines.

August 22: The New York Telephone Co. filed a revision of its tariff schedules. It establishes a new central office district known as Round Lake and will include the localities of Round Lake, Malta and Maltaville in Saratoga county, which are now in the Jonesville central office district. The rates for various classes of service will be the same as those now charged in the Jonesville district and no change is made in the existing local calling area of the subscribers within the new district.

The new district will improve service in the area and will meet the growing demand of subscribers in the vicinity of Round Lake for a designation of their own and base rate area treatment. It is estimated that annual revenue will be reduced $338.40 as a result of the new district. The mileage charges of two individual line subscribers and 17 four-party line subscribers in the new district will be eliminated.

August 22: The Cazenovia Telephone Corp. filed a supplement to its tariff schedules. It provides that service connection charges shall not apply between August 15 and October 15 in the central office district of Cazenovia in Madison and Onondaga counties.

The company states that this change is made to stimulate new business and to encourage the reconnection of disconnected stations. During the last few months several other companies in the state have removed service connection charges for temporary periods.

WISCONSIN.

August 20: Hearing in the matter of dual service at Brownsville, where both Oakfield Telephone Co. and the Theresa Telephone Co. operate.

The patrons of one exchange must pay a 10-cent toll to talk to persons in the other exchange. The service charge maintained by the Theresa company is $2 per month, while that of the Oakfield company is $1.50.

It was said that it is possible for all of the patrons in Brownsville and vicinity to obtain service through one exchange; however, for local reasons they prefer to have two. It was said that the family groups were listed as subscribers for one company.

The hearing, it was said, involved efficiency in service rather than rates.

September 3: Hearing in Madison on the rates, rules and practices of the Farmers' New Era Telephone Co. This company has headquarters at Hebron, Ill., and operates an exchange at Wilmot, Wis.

September 5: Hearings in Madison on the applications of the Larson, Markesan and Grand River Telephone companies to be allowed to increase their rates.

OLD GOLD

By ANNE BARNES

Traveling Chief Operator, Iowa Independent Telephone Association, Des Moines, Iowa

Not long ago I saw a bent, decrepit old man intently peering into a jeweler's window. I didn't think much about the incident until I returned that way quite a little while later and saw him still standing there. "Some poor derelict cast into humanity's discard due to the depression. Time on his hands and no useful way to use it," I thought.

But my curiosity was whetted. I wondered what could possibly interest a shabby old man so long, in a jeweler's window. And so I paused and looked in, too. He smiled sadly at me and pointed to a pile of old watches of every description on top of which was mounted a card bearing these words: "We buy old gold."

Observing my interest, he remarked: "There are a lot of good watches in that heap. I could make many of them work. What a waste they represent! Like myself, they have a lot of usefulness still in them—un-called for." No doubt, that old watch repairer could have told me a very interesting story. What a pity we cannot know more about the many people we meet casually; at least, some of them.

I have felt compelled to pause at that window two or three times since. Each time the pile of watches is a little bigger. And the thought comes to my mind that I would like to know something about the folks who owned these watches once upon a time. Who wore them? Why did they finally end their usefulness on this heap in the window?

There were wrist watches and pocket watches of every sort. Some were of rare design; some rich with antiquity; and many were too flashily decorated. All of them were more or less battered and broken. But they all had this in common: motionless hands and faces that had ceased to perform their mission—telling the time of day.

I have no doubt that if the old watch repairer could get at those watches for a few days, he would have many of them gaily ticking. Only the hopeless would be returned to the pile.

Somehow, they all made me think of the folks one meets quite commonly here and there nowadays. I mean those who—like the old watch repairer—once led active, useful lives but now are run-down because there is no call for their usefulness. Their faces, like those of the watches in the window, tell nothing that anyone needs to know.

The individual usefulness in those old watches was worth far more than the mite of gold in them. But somebody wanted the gold enough to sacrifice the usefulness for a pittance if he could make folks sell out.

Moral: One of the best chief operators I have ever met was once definitely headed for the discard. If she had not made good as an operator, I would never have known her usefulness as chief operator and her company would have been the loser as well as herself. Who would have been partly to blame?

KNOW YOUR EMPLOYES, CHIEF OPERATORS!

The Manufacturers' Department

Chance Company Issues Correct Anchoring Book

The A. B. Chance Co. has just published a new, revised edition of "Correct Anchoring," a booklet containing valuable information concerning the most satisfactory methods of anchoring pole lines. It explains the advantages

A View of the New Chance Booklet on Anchoring.

of patent anchors; describes the different types, their uses and holding power.

The booklet includes "Figuring Strains on Guys," which explains methods of eliminating guess work in determining the necessary holding power for anchors and guy strand. Formulas and tables are presented that may be applied to any usual problem encountered in pole line construction. A copy of this book may be secured without charge by writing direct to the company at Centralia, Mo.

• • •

Catalog on Communication and Signaling Apparatus

The Automatic Electric Co., Chicago, has just issued a comprehensive catalog of "Railway Communication and Signaling Apparatus and Materials," designated as catalog 4070. Containing 144 pages, approximately 8½ by 11 inches, it is bound in an attractive and sturdy cover of deep maroon leatherette and is illustrated profusely throughout with drawings and half-tone reproductions.

The foreword states that the Automatic Electric Co. brings to the railroad industry the experience of a pioneer development and manufacturing organization in the field of electrical communication, signaling and remote control. The range of products covered in this catalog serves to indicate something of the scope of the Autelco line.

It includes not only those many products which have been designed specifically to meet the requirements of railroad communication and signaling departments, but, in addition, an extensive listing of telephones, telephone switchboard equipment, supplies, parts, accessories and other apparatus of more general application.

The American Automatic Electric Sales Co. is distributor for products of the Automatic Electric Co. in the United States and its possessions.

• • •

Modern Service For Keystone, Okla.

The Cimarron Telephone Co., Mannford, Okla., has recently installed a 60-line capacity North all-relay dial automatic switchboard equipped with the universal link feature, which permits standard dial service to be given on both grounded and metallic lines, in its Keystone, Okla., exchange.

Fred. C. Trower, vice-president of the Oklahoma Telephone Association, is owner and manager of the Cimarron company. The Keystone exchange is located approximately 20 miles due west of Tulsa.

The Keystone switchboard is equipped to serve 20 metallic lines and 10 grounded lines. The new switchboard has incorporated in it all of the modern features, such as line lockout, which prevents the equipment from becoming tied up due to receivers being left off the hook or because of permanent shorts on the line, and time disconnect which automatically places a calling line on lockout if the called party does not answer within two to four minutes.

A line placed on lockout in this way is immediately restored to normal by replacing the receiver on the hook. Ten code ringing is provided, arranged to give semi-selective ringing on metallic party lines and ordinary ten code ringing on the grounded lines. Single-party service is also available.

The new equipment is housed in a building which was designed and built especially for this exchange. The floor is a solid concrete slab. The walls are composed of hollow building tile, and the roof consists of another concrete slab. The building presents a very substntial and compact appearance.

All of the toll and information calls are taken care of from the nearby town of Mannford, which is the operating center for the company.

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Condensed Telephone News

New Companies and Incorporations

SCHERTS, TEXAS.—The Farmers' Rural Telephone Co. has been incorporated, with no capital stock, by Oswald Pfeil, Rudolph C. Kneupper and Herman Voges.

Construction

FALLON, NEV.—The rebuilding and repairing of lines of the Churchill County Telephone & Telegraph System at an estimated cost of $6,000 is one of work relief projects approved by the county and state planning boards and submitted to WPA in Washington. Six miles of lines will be replaced entirely. Two toll circuits are included and they will be balanced and phantomed for a third circuit. Replacement of poles and other repairs are included in the plans. The county will furnish all materials, poles and hardware being already on hand.

Construction

MIDDLETOWN, N. Y.—The Orange County Telephone Co. has drawn plans for additions to its building here which will afford twice the space now available for commercial purposes. Plans involve extension of the front of the present building 20 feet on the westerly side, and 50 feet on the easterly side. The building will extend 110 feet on John street with a new front of brick and artificial stone for the entire building. The cost of the additions is tentatively estimated at $50,000.

Telephones

CINCINNATI, OHIO—The Cincinnati & Suburban Bell Telephone Co., with a net station gain of 323 made the best showing for July since 1927, according to official reports. The company had a total of 152,726 telephones in operation at the end of July against 149,017 as of July 31, 1934.

COLUMBUS, OHIO—Noticeable improvement is shown in the Columbus exchange area of the Ohio Bell Telephone Co. during the first seven months of this year, over the same period of the past six years, according to a report just issued. During this period in 1935, 1,195 telephones were added in Columbus as compared with 637 during the same months in 1934. A comparison with previous years reflects a decrease in the number of telephones as follows: 1930, 982; 1931, 1,747; 1932, 7,154; 1933, 4,545.

The number of telephones disconnected during the first seven months in 1935 is much lower than for any of these years except in 1934. In 1935 5,779 telephones were disconnected in the seven months' period, as compared with 5,799 in 1934; 10,043 in 1933; 13,612 in 1932; 9,364 in 1931 and 10,170 in 1930.

Improvement is shown in the number of new telephones connected during the period: 9,188 were connected in 1930; 7,617 in 1931; 6,458 in 1932; 5,498 in 1933; 6,436 in 1934, and 6,974 in 1935.

The season loss during July was much less than was experienced in the preceding years for the same month, this being 219. In 1930 the loss was 633; 624 in 1931; 2,004 in 1932; 957 in 1933, and 507 in 1934.

Miscellaneous

MANHATTAN, KANS.—A motion by Mrs. Cecelia Cordts to dismiss her suit against the United Telephone & Electric Co. to recover $8,260 on the alleged grounds of fraud and misrepresentation in her purchase of stock of the company through Harry K. Wareham was denied July 5 by Judge Edgar C. Bennett of the district court.

Judge Bennett held he had no jurisdiction in the motion because of an earlier motion filed by the defendant to have the suit removed to the federal court. He signed an order for the transfer.

LIBERAL, MO.—Mr. and Mrs. Jesse R. Swearengen of Liberal have taken over the controlling interest of the Liberal Mutual Telephone Co. The new board of directors includes Mr. Swearengen, president and general-manager; Dr. I. R. Spell, vice-president; James O. Pinkerton, secretary-treasurer, and Mrs. Swearengen, board member.

No change will be made in the present personnel of the force and the policy of the company will be unchanged, Mr. Swearengen said.

MIAMI, OKLA.—A resolution asking the Southwestern Bell Telephone Co. to pay a municipal tax "in connection with the exercise of regulatory duties and police powers" has been passed by the city commission.

The demand is in line with similar procedure by other towns in Oklahoma and was made possible through an act of the last legislature. A definite amount was not fixed by the resolution, but it is believed a percentage of gross receipts will be the basis for payment. Other Oklahoma cities have asked a 2 per cent gross tax.

BUCKHANNON, W. VA.—A new schedule of rates for out-of-town calls between neighboring towns in West Virginia went into effect July 1, which made this service available to more West Virginia people than ever before, according to C. A. Robinson, general manager of the Chesapeake & Potomac Telephone Co. of West Virginia.

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Buyer's Weekly Guide

A list of firms and companies offering equipment, supplies or services for operating telephone companies

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Burroughs Adding Machine Company, Second Blvd., Detroit, Mich. — Adding, Bookkeeping, Calculating, Billing and Accounting Machines, Electric Carriage Typewriters, Standard Typewriters, Operator Correct-Posture Chairs. Burroughs machines are in use today in hundreds of progressive telephone companies throughout the country.

BATTERIES—DRY CELLS

Burgess Battery Co., Freeport, Ill.—Burgess Flashlights and Uni-Cel Flashlight Batteries—for dependability and service. The Burgess Twin-Six Telephone Battery —a 3-volt unit designed to replace two No. 6 cells, with longer life, lighter weight, smaller size and a leakproof case. The Burgess Little-Six—replaces the old type No. 6 cell, is smaller and lighter, will not ooze or bulge, has all the electrical capacity of the standard No. 6 cell.

National Carbon Company, 30 E. 42nd St., New York.—"Columbia" Telephone Dry Batteries; "Eveready" Flashlights, Flashlight Batteries and Long Life Dry Cells, "National Pyramid" brushes, carbon, graphite and metal graphite for motors, generators and rotary converters. "Eveready" Prestone anti-freeze; "Eveready" Rustone rust preventive; and "Eveready" Air Cell telephone operators' transmitter batteries.

Ray-O-Vac Company, Madison, Wis. —Ray-O-Vac telephone batteries — longer life and better service proven by tests in accordance with U. S. Government standards and records of users. Ray-O-Vac flashlights and industrial flashlight batteries are other items showing Ray-O-Vac's outstanding quality.

BATTERIES—STORAGE

The Electric Storage Battery Company, Allegheny Ave. and 19th St., Philadelphia, Pa.—Exide Storage Batteries. Branches: Boston, New York, Rochester, Philadelphia, Pittsburgh, Washington, Atlanta, Cincinnati, Cleveland, Detroit, Chicago, Kansas City, Minneapolis, St. Louis, Denver, San Francisco and Seattle.

BATTERY CHARGING EQUIPMENT

General Electric Company, Bridgeport, Conn.—Tungar battery chargers. G-E pole line hardware. Cable filling compound.

CABLE—LEAD ENCASED

American Electrical Works, Phillipsdale, R. I.—Paper telephone cable, switchboard cable, bare copper wire. Chicago Office: 20 N. Wacker Drive; Cincinnati: Traction Bldg.; New York: 100 E. 42nd St.

British Insulated Cables, Ltd., Surrey House, Embankment, W. C. 2, Factory: Prescot, Lancashire, England.—Telephone cable of all sizes and capacities.

General Cable Corporation, 420 Lexington Ave., New York, N. Y.—Paper telephone cables of standardized manufacture for over forty years. Weatherproof and insulated copperweld drop wire.

Eugene F. Phillips Electrical Works, Ltd., Montreal, Can.—For any type of wire or cable used in telephone, telegraph or power work get in touch with "Phillips." Manufacturers of bare and insulated copper wires, rubber insulated wires, enameled wire, magnet wire, telephone cables, power cables, switchboard cables, flexible cords, copper rods, etc.

CABLE RINGS

National Telephone Supply Company, 5100 Superior Ave., Cleveland, Ohio.—National Cable Rings, National Splicing Sleeves, Non-Breakable Messenger Cable Hangers, Marlin and Swisher Cable Hangers and Custom Galvanizers. National cable rings are practical because they are two-way,—they allow the cable to be pulled in either direction. National sleeves make secure the weakest points in the line. If it's a splice—make it a National.

CABLE TERMINALS

Cook Electric Company, 2700 Southport Ave., Chicago, Ill.—Protective Pole Cable Terminals, Unprotected Pole Cable Terminals, central office protection, lighting arresters, sleeves, fuses.

Reliable Electric Company, 3145 Carroll Ave., Chicago, Ill.—Complete line of cable terminals, telephone and switchboard protectors, sleeves, fuses, solderless wire connectors and specialties.

CARBON DIAPHRAGMS

Noris Carbon Company, Inc., 160 5th Ave., New York, N. Y.—Carbon diaphragms, carbon back plates, granular and globular carbons, lightning arresters.

CONDUIT

Brazil Hollow Brick & Tile Company, Brazil, Ind.—Makers of Brazil Vitrified Tile. Condult.

CORDS, CABLE AND WIRE

Lenz Electric Manufacturing Co., 1751 N. Western Ave., Chicago—Established 1904—telephone and switchboard cords for all makes of equipment, braided and lead-covered telephone cable, flame-proof jumper wire, interior telephone wire, switchboard wire.

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Runzel Cord & Wire Co., 4727-31 Montrose Ave., Chicago—Telephone and Switchboard Cords, Flame-proof Jumper Wire, Switchboard Wire, Interior Telephone Wire. W. L. Runzel, President, has devoted over 40 years to the making of fine telephone cords.

ELAPSED TIME RECORDERS

Calculagraph Company, 50 Church St., New York, N. Y.—Calculagraph is the world's standard elapsed time recorder and gives you toll records printed with elapsed time to the second. Both spring driven and electric motor models are available.

POLES

B. J. Carney & Co., 100 N. 7th St., Minneapolis, Minn.—Western red cedar poles. Pentrex Butt Treated or Plain.

Alfred E. Cowling, Scotstown, Quebec.—Eastern cedar poles, plain or butt treated.

International Creosoting and Construction Company, Galveston, Texas—Creosoted Southern Yellow Pine Poles. Plants: Beaumont and Texarkana, Texas.

Jordan Bros. Lumber Co., Box 84, Norfolk, Va.—Virginia White Cedar Poles. Plain or charred and creo-treated butts.

MacGillis & Gibbs Company, Milwaukee, Wis.—Northern White and Western Red Cedar Poles. Plain or butt-treated. Immediate quotations on request.

Michigan Pole & Tie Company, Newberry and Grand Rapids, Mich. — "Poles with Character." Northern White and Western Red Cedar. Strategically located yards, Minneapolis, Minn., and Reed City (Lower Michigan), insure quick deliveries.

Naugle Pole & Tie Co., 5 South Wabash Ave., Chicago, Ill. Northern White and Western Red Cedar Poles. Plain or butt-treated. Let us quote you our new low prices.

H. Sigalet & Company, Ltd., Lumby, B. C., Canada — Western Red Cedar Poles. Plain or Butt treated.

Valentine Clark Corporation, 2516 Doswell Ave., St. Paul, Minn.—Finished Cedar Poles. Plain or Butt treated.

SUPPLIES, SWITCHBOARDS AND INSTRUMENTS

American Automatic Electric Sales Company, 1033 West Van Buren Street, Chicago, Ill.—Public Automatic Telephone Systems, Private Automatic Telephone Systems, Central Battery and Magneto Manual Telephone Switchboards, Remote Control Switchboards, Telephone Instruments of all types, Battery Eliminators, Charging Equipment, Signaling and Control Apparatus, Cords, Wires, Cables, Monotype Copperweld Drop Wire, and a complete line of construction materials and supplies.

Automatic Electric Company, 1033 W. Van Buren St., Chicago, Ill.—Public Automatic Dial Systems, Private Automatic Dial Systems, Telephones, relays, signalling and control equipment.

Automatic Electric Company, Ltd., Milton Road, Edge Lane, Liverpool, England. —Automatic Telephone Equipment.

Automatic Electric Sales Company, Ltd., 1027 W. Van Buren St., Chicago, Ill.—Public Automatic Dial Systems, Private Automatic Dial Systems, Manual Telephone Equipment, telephones, storage batteries, wire, cable, poles, etc.

Kellogg Switchboard & Supply Company, Adams & Aberdeen Sts., Chicago, Ill.—Engineers and designers, manufacturers and suppliers of complete equipment for telephone exchanges and communication systems. Manufacturers of "Master-built" Common Battery, Magneto and PBX Switchboards, "Masterphone" Telephone Instruments, and a complete line of telephone supplies, including bronze drop and interior wire.

North Electric Manufacturing Company, Galion, Ohio—Machine switching telephone systems. Automanual and Automatic. "All-Relay" Switching Apparatus (Dialless and Dial Control). Unattended Satellite Systems.

Siemens Brothers & Company, Ltd., Woolwich, England—Automatic and Manual Telephone Equipment.

Stromberg-Carlson Telephone Manufacturing Company, 100 Carlson Road, Rochester, N. Y. — Telephone apparatus of all kinds, switchboard cords, cable and general telephone supplies.

TOOLS

Crescent Tool Co., Jamestown, N. Y.—CRESTOLOY Pliers, Curved Needle Nose Pliers, Heavy Diagonal Cutting Pliers, Linemen's Side Cutting Pliers, End Cutting Nippers, Crescent Hack Saws.

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WANTED—Private party wishes to purchase telephone exchange approximately seven to fifteen hundred stations. Will pay cash. Address 8453, care of TELEPHONY.

RECONDITIONED

DESK STANDS

Kellogg No. 84, No. 97 and No. 118.

Stromberg-Carlson No. 992, No. 986, No. 988 and No. 1168.

Western Elec. Co. 1020-AL, 1020-B and 1040-AL

BELL BOXES

Kellogg No. 257, No. 259, No. 407 and No. 408.

Stromberg-Carlson No. 1131, No. 1132, No. 1156 and No. 1158.

Western Elec. Co. No. 334-A and No. 534-A.

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COLUMBUS, OHIO

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POSITION WANTED — Combination man, magneto, common battery, machine switching; 20 years' experience, 14 years one company; can qualify any company, large or small. Address 8472, care of TELEPHONY.

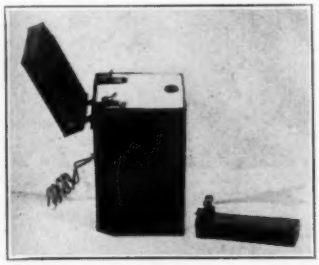
POSITION WANTED—By all around telephone man with technical, engineering, managerial experience, Bell and Independent. Have ability to place telephone properties on better paying basis. Best references. Go any place. Address 8427, care of TELEPHONY.

POSITION WANTED—Traffic or commercial, thoroughly familiar with latest engineering and operating methods. Dial or manual; single or multi-office; force adjustment and management. Address 8468, care of TELEPHONY.

EXPERIENCED commercial and traffic man desires position with either Independent telephone company or equipment manufacturer. Am 29 years old and have had plant training. Prominent local and toll office, of which I was traffic chief, enjoyed service record. Best references. Address 8463, care of TELEPHONY.

POSITION WANTED—As manager, troubleman and operator. Am 29 years old—have had seven years' experience on both C. B. and Magneto Exchanges. Will go anywhere—wife an experienced operator. Best of references. Address 8458, care of TELEPHONY.

FOR SALE



Locate cable trouble with the **CANTY FAULT FINDER.** This new cable tester operates on two dry cells and locates all cable faults (except opens). There are two binding posts for lead wires to bad cable pairs. Adjustment of tone is simple,—move lock nut up or down. Size 3"x4"x7". No telephone exchange should be without the **CANTY FAULT FINDER.** Price $12.50 postpaid complete, less head set. Address 8101, care of TELEPHONY.

HERE AND THERE IN TELEPHONE WORK

(*Concluded from page* 16)

are rented to those who desire to tune in. The instruments closely resemble ordinary receivers. Several sets developed for wired radio reception also are adjusted for "wireless" reception like an ordinary set.

The Cleveland system was developed and completely installed several years ago, but was kept inoperative because of the unfavorable business conditions.

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The Telephone Exhibit At San Diego Exposition

Thousands of visitors to the California-Pacific International Exposition at San Diego, Calif., are fascinated by the Bell System exhibit which includes "Hear Your Own Voice," "See Your Own Voice" and "Scrambled Speech" demonstrations.

The first demonstration is accomplished by a mechanism made by the Bell Telephone Laboratories which records the voice by a magnetic process on a steel tape. It literally enables a person to talk to himself. The visitor first talks into a transmitter and then, five seconds later, it comes from the receiver, enabling him to hear his own voice just as it sounds to others. Meanwhile, as many as 26 other persons may listen through watchcase receivers to the voice as it is recorded and reproduced.

The oscilloscope is the device which makes possible the "See Your Own Voice" demonstrations, changing the tones of the voice into a visual wave form. The equipment used in the "Scrambled Speech" demonstration enables the public to try for themselves the device used to insure privacy on transoceanic telephone calls.

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Flashes and Plugs—News Briefs and Comments

Ten widely-known telephone and telegraph officials, including President Walter S. Gifford and Vice-President Edwin F. Carter of the A. T. & T. Co., relinquished some of their positions on boards of directors of telephone and telegraph companies throughout the United States as the result of an order from the Federal Communications Commission. The order, issued June 10, was made effective August 9.

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Robert H. Jackson, who, as counsel for the Internal Revenue Bureau, handled the tax bill before Congress, represented the Jamestown Telephone Corp., Jamestown, N. Y., for many years.